**Universidade de Aveiro**
**Ano 2018**

Departamento de Educação e Psicologia

**ISABEL MARIA ALVES DE SOUTO**

# Fatores de risco psicossocial e distress em professores do ensino superior

# Psychosocial risk Factors and distress in higher education teachers

**Universidade de Aveiro** Departamento de Educação e Psicologia
**Ano 2018**

**ISABEL MARIA ALVES DE SOUTO**

# Fatores de risco psicossocial e distress em professores do ensino superior

# Psychosocial risk factors and distress in higher education teachers

Tese apresentada à Universidade de Aveiro para cumprimento dos requisitos necessários à obtenção do grau de Mestre em Psicologia da Saúde e Reabilitação Neuropsicológica, realizada sob a supervisão científica da Doutora Anabela Maria Sousa Pereira, Professora Associada com Agregação do Departamento de Educação e Psicologia da Universidade de Aveiro, Doutora Elisabeth de Jesus Oliveira Brito, Professora da Escola Superior de Tecnologia e Gestão de Águeda da Universidade de Aveiro e Doutor Luís Nuno Sancho Ribeiro, Professor Adjunto na Escola Superior de Saúde da Universidade de Aveiro.

Dedico este trabalho à minha irmã Lúcia Souto, por tudo...

**o júri**

Presidente

Doutora Sara Otília Marques Monteiro
Professora Auxiliar Convidada, Universidade de Aveiro

Doutora Cristina Maria Leite Queirós
Professora Auxiliar, Universidade do Porto

Professora Doutora Anabela Maria Sousa Pereira
Professora Associada C/ Agregação, Universidade de Aveiro (Orientadora)

**agradecimentos**

A realização deste trabalho só foi possível graças à ajuda e contributo de muitas pessoas, pelo que gostaria de agradecer especialmente:

- Às minhas orientadoras, Professora Doutora Anabela Pereira e Professora Doutora Elisabeth Brito pela inspiração, dedicação, incansável apoio, contributo, motivação, disponibilidade e profissionalismo de excelência;

- Ao meu orientador, Professor Doutor Luís Sancho pelo apoio prestado no decorrer do presente trabalho;

- A todos os professores que voluntariamente se disponibilizaram para a recolha dos dados, sem eles este trabalho nunca teria sido possível;

- Ao meu marido e filhos, à minha irmã e sobrinhos pela confiança, dedicação, força transmitida ao longo de todo o percurso e, principalmente paciência.

- Aos meus amigos pela alegria transmitida nos momentos mais difíceis;

**palavras-chave**

Riscos Psicossociais, Distress, Ansiedade, Professores de Ensino Superior, Saúde Ocupacional.

**resumo**

Sabe-se que os problemas de saúde ocupacional em professores são prevalentes. Vários autores apontam a importância dos fatores de Risco Psicossocial (RP) do trabalho nesse fenômeno. Em particular, no Ensino Superior (ES), o trabalho de professor é marcado por um clima de inovação constante, turbulência (alteração do papel do professor e relação do mesmo com o aluno) e de elevada exigência ao nível de desenvolvimento pessoal, profissional e científico, que obriga ao desempenho de diferentes funções. Percebe-se que este contexto de trabalho conta com um elevado número de RP, provenientes do conteúdo ou contexto do trabalho, passiveis de causar elevados níveis de *distress* e ansiedade, e cujo impacto físico, psicológico e institucional é indissociável.

O presente estudo pretende proceder à investigação da realidade subjacente em termos de RP, ansiedade e *distress* em professores do ES. Para tal, foi realizado um estudo empírico envolvendo 97 professores do ES, que trabalham nos departamentos da Universidade de Aveiro (n = 50) e nas Escolas do Politécnico (n = 47). Para esta avaliação, foram utilizados os seguintes instrumentos: Escala de *Distress* Psicológico de Kessler (K10), Escala Breve de *Coping* Resiliente (EBCR), Inventário de Ansiedade estado-traço (STAI) e Questionário psicossocial de Copenhaga (COPSOQ, versão média).

Foram encontrados quatro resultados principais: 1) as funções cumulativas desempenham um papel na sobrecarga do professor; 2) uma grande percentagem de respondentes apresentou sintomas significativos de *distress* psicológico e ansiedade, sendo este efeito fortemente maior no sexo feminino; 3) Exigência laboral é a dimensão que representa o maior risco para a saúde, assim como a dimensão Saúde / Bem-estar apresenta mais correlações significativas para o aumento do *distress* e ansiedade; 4) Conflito entre trabalho e família, significado do trabalho, exigências emocionais, sintomas depressivos, *stress* e problemas em dormir são preditores significativos dos níveis de *distress* e ansiedade.

O presente estudo responde à lacuna de investigação no contexto relacionado ao trabalho de professores de ES, constituindo-se como o primeiro passo para a construção de ferramentas de intervenção integradas nas especificidades do mesmo.

**keywords**

Psychosocial Risks, Distress, Anxiety, Higher Education Teachers, Occupational Health.

**abstract**

It is known that occupational health problems in teachers are prevalent. Several authors point out the importance of the work Psychosocial Risk factors (PRs) this phenomenon. Particularly, in Higher Education (HE), teacher work is marked by a climate of constant innovation, turbulence (alteration of the teacher's role and teacher-student interaction) and a high level of personal, professional and scientific, which requires the performance of different functions. It is noticed that this work context counts with high number of content or context of the work PRs, that can cause high levels of distress and anxiety, and whose physical, psychological and institutional impact is inseparable.

The present study intends to investigate the PRs, anxiety and distress underlying work reality in HE teachers.

An empirical study was carried out involving 97 HE teachers, working at University of Aveiro departments (n=50) and Polytechnic's Schools (n=47). To this assessment, the following instruments were used: Kessler Psychological Distress Scale (K10), the Resilient Coping Brief Scale (EBCR), the State-Trait Anxiety Inventory (STAI) and the Copenhagen Psychosocial Questionnaire (COPSOQ, medium version) to a group teacher working on Aveiro University.

Our study points to four main findings: 1) total cumulative functions play a role in HE teacher's overload; 2) a large percentage of responders presented significant psychological distress and anxiety symptoms, being this effect strongly higher in females; 3) work demands dimensions represent most health risk, as well with Health/ Well-being dimensions presenting the most significant correlations for distress increase in HE teachers; 4) Work-family conflict, meaning of work, emotional demands, depressive symptoms, stress and sleeping problems are significant predictors of both distress and anxiety levels.

The present study responds to the research gap in the work-related context of ES teachers, constituting as the first step towards the construction of intervention tools integrated in the specific work specificities.

# Index

## Figures List

## Tables List

## Abbreviations list

BRCS - Brief Resilient Coping Scale | Escala breve de *coping* resiliente

COPSOQ - Copenhagen Psychosocial Questionnaire | Questionário psicossocial de Copenhaga

HE - Higher education | Ensino superior

K10 - Kessler Psychological Distress Scale | Escala de *distress* psicológico de Kessler

OS – Occupational Stress | *Stress* Ocupacional

PRs – Psychosocial Risks | Riscos Psicossociais

STAI - State-trait anxiety inventory | Inventário de ansiedade estado-traço

STAI-Y1 - State anxiety inventory (subscale) | Inventário de ansiedade estado (subescala)

STAI-Y2 - Trait anxiety inventory (subscale) | Inventário de ansiedade traço (subescala)

**Psychosocial Risk Factors and Distress in Higher Education Teachers**

In recent decades, workplaces had undergone profound changes driven by a climate of constant innovation, with high demand reflected on their workers (Fernandes & Pereira, 2016). Thence, the experience of stress is common for everyone, in everyday life, emanating from challenges experiences, leading to develop new skills at an adaptive way (Hassard, Cox, Murawski, De Meyer, & Muylaert, 2011). However, when this exposure is too long, or too demanding it can lead to the experience of distress, which correspond to a negative and aversive state, which may lead to significant health problems (Hassard et al., 2011).

Hence, a growing concern with work-related distress has been evident, seeking to underpin a definition and explain its mechanisms (Caplan, 1987; Cox, 1993; Cox & Griffiths, 2010; Edwards, Caplan, & Harrison, 1998; Hassard et al., 2011; Karasek, 1979; Leka & Jain, 2010). This problem is commonly referred as occupational stress (OS), and there are ranges of classics and contemporary explains paradigms for this problem (Cox, 1993; Cox & Griffiths, 2010).

In the classics approaches, OS is conceptualized as "which happen *to* the man, not which happen *in* him; is a set of *causes*, not a set of *symptoms*" (Engineering Approach) (Cox, 1993). In this, OS is considerate a man external event, corresponding to an aspect of work environment, i.e., an independent variable (Cox, 1993; Cox & Griffiths, 2010). Other studies characterize the OS as result of repeated and prolonged physiological activation, which occur in response to continuous work-related stress generators (Physiological Approach). In this, OS is define as generalize syndrome that emerge from biological stress-response system exhaustion, i.e., a dependent variable (Cox, 1993; Cox & Griffiths, 2010).

It should be note that, despite the importance and validity of these paradigms, they correspond to models that include OS as a simple stimulus-response phenomenon, which devalues the individual's interactions in the process (Cox, 1993; Cox & Griffiths, 2010; Kinman, 2001). Thus, the contemporary approaches emerge, in which OS is conceptualize as dynamic person-environment interaction problem, that also includes the psychological cognitive processes and emotional responses - Psychological Approaches (Interactional and Transactional models)(Cox, 1993; Cox & Griffiths, 2010; Edwards et al., 1998; Hassard et al., 2011). The Interactional models include: Person-Environment Fit theory (P-E Fit theory): considerate the bidirectional length of individual-ability and job-demands feet as well the degree which the job supplies the individual needs); Effort-Reward Imbalance

Model (ERI model): pairing between effort spend at work and rewards provided on money, esteem, career development); Job Demand-Control theory (JDC): job stain results from interaction between workload and job control or decision latitude)(Caplan, 1987; Cox, 1993; Cox & Griffiths, 2010; Edwards et al., 1998; Hassard et al., 2011; Karasek, 1979; Siegrist, 1996).

In its turn, transactional theories (such as the present work), is considerate as well the interaction between individual and work environment. However, in this approaches OS is describe as *psychological state* that arrives from the individual appraisal of the work environment. It is, not limited to the types or number of work environment factors. On the contrary, is a complex relationship that includes the cognitive and emotional aspects of this interaction as well (cognitive appraisal). In addition, this models also recognize that OS can manifest physiologically, psychologically, behaviourally and socially (Figure 1)(Cox, 1993; Cox & Griffiths, 2010).

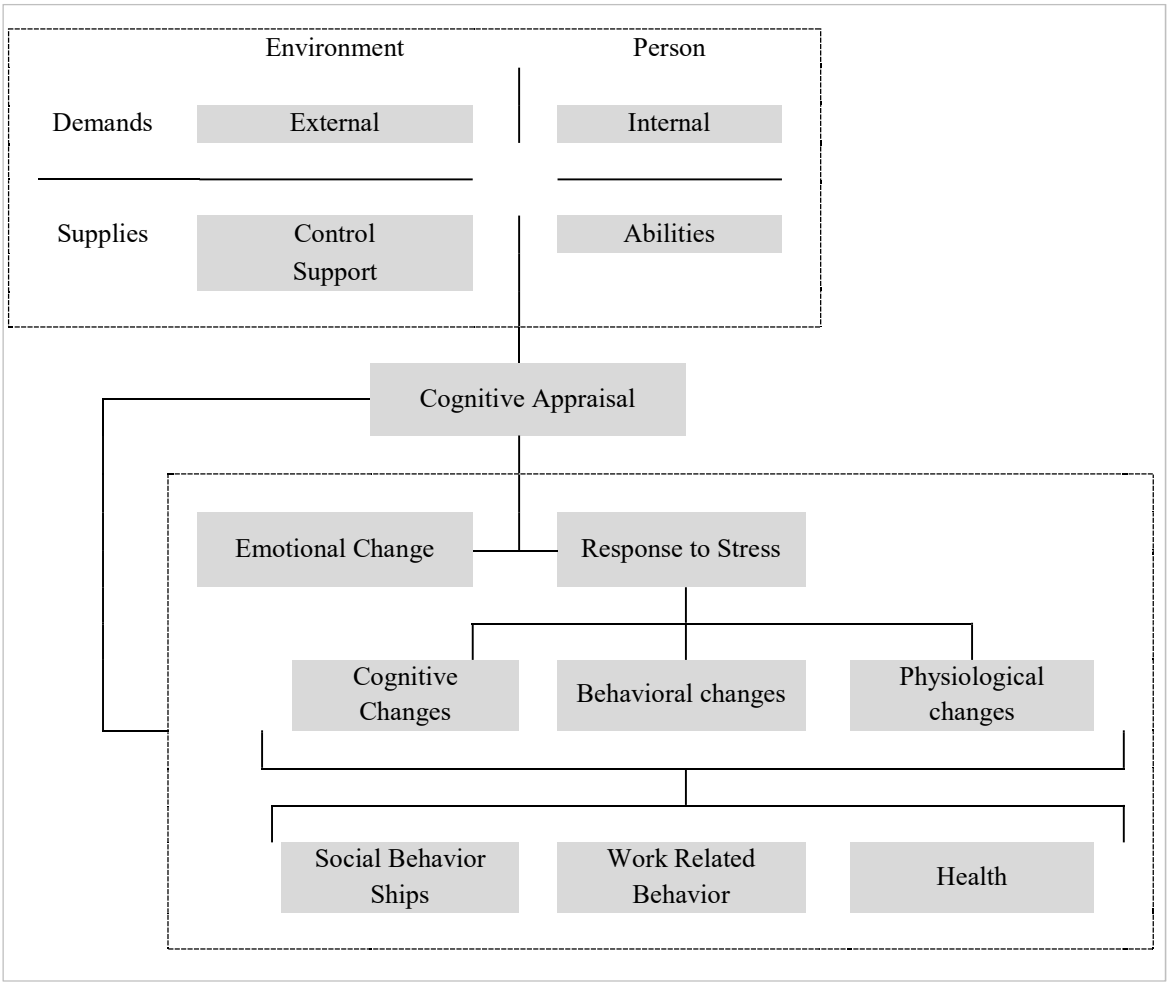


*Figure 1.* Transactional model of occupational stress retrieved from Cox (1993).

Notice that this cognitive appraisal is highly influenced by a number of factors (e.g. personality, situation, experience), in particular the cope capacity, because adaptation is central to stress response (Cox, 1993; Cox & Griffiths, 2010; European Agency for Safety and Health at Work [EU-OSHA], 2018; Thorsen, 1996).

In sum, such as in classic general stress theories (e.g. Lazarus stress theories), transactional approaches describes OS as the result from the individual's appraisal and perception of internal ability and external resources (balance in demands and support) to respond to work challenges experiences in an integrative way (Cox, 1993; Cox & Griffiths, 2010; Kinman, 2001; Leka & Jain, 2010). When this evaluation is positive, stress can be as well a positive experience that leads to the development of new skills in an adaptive way. However, when there is individual's lack of resources perceived (i.e. the individual considers not have external or/and internal resources to respond to the challenge needs), it can leave to the experience of distress, which correspond to an aversive event. When this distress exposure is too long or too demand it can leave to maladaptive social or work-related behaviour (Cox, 1993; Cox & Griffiths, 2010; Edwards et al., 1998; Leka & Jain, 2010). Nevertheless, it´s well known that work-related distress could seriously impair the worker´s physical health (e.g. musculoskeletal injuries, raised blood pressure) and mental ill (e.g. anxiety, depression, burnout), that could result in temporary or permanent functional impairment and consequent working days lost (Cox, 1993; Cox & Griffiths, 2010; Hassard et al., 2011; Kinman, 2001; Leka & Jain, 2010). It is also highly related to decreases of working ability through lesser dedication to work, low productivity, unsafe labour practices resulting in increased accident rate (Cladellas & Castelló, 2011; EU-OSHA, 2018; Kinman, 2001). Therefore, in addition to the individual impact, it is also important to consider the organizational impact, given that functional incapacity at work and/or high absenteeism, indirectly decreases the organization competitiveness, as well economic and social impact (EU-OSHA, 2018; Hassard et al., 2011).

These highlight several issues of safety and health at work and it has been recognized in recent years that beyond the physical, chemical and biological risks, should also be considered a set of work-related stress generators, known as Psychosocial Risks (PRs) (EU-OSHA, 2018; Kristensen, Hannerz, Høgh, & Borg, 2005; Leka & Cox, 2008; Leka & Jain, 2010; World Health Organiztion, 2013). Currently, the negative effects arising from the way work is designed, organized or managed, as well economic and social context it is

considered as a PRs, given interrelation to cause high distress levels and consequently adverse effect on worker health, performance or personal well-being (Cladellas & Castelló, 2011; Cox, 1993; EU-OSHA, 2018; Fernandes & Pereira, 2016; Hassard et al., 2011; Leka & Jain, 2010). PRs can have origin in either content or context of work. Content factors include several categories as task/content organization, workload and rate, work schedules, work related decisions participation and self-control. In its turn, contextual PRs factors may come from organizational culture, role within the organization, career development, status, remuneration, interpersonal relations or work-life poor balance (Cox, 1993; Fernandes & Pereira, 2016; Leka & Jain, 2010).

The recognition of these factors in recent years has evidenced the central role and responsibility of organizations in the health of their workers, specifically at mental ill prevention and mental health promotion (Cladellas & Castelló, 2011; Hassard et al., 2011). However, it is necessary to emphasize that these prevention measures should be fully integrate to specific work contexts, given the variability of organization's operating profiles and respective underlying processes (Hassard et al., 2011). Thus, the first step in the construction of intervention policies and tools is an effective assessment (Cladellas & Castelló, 2011; Kinman, 2001).

**Work-related distress in Higher Education**

Is undeniable the social reorganization that has taken place in recent years, driven by migratory flows and demographic changes of the population. Thus, in order to facilitate the mobility of students (and job seekers) within Europe, the need to reconcile educational systems also emerged (European Commission, 2018). This process, called the *Bologna Process*, has led to a profound transformation of the Higher Education (HE) and training system in Europe in a collective effort of all involved, such as teachers (European Commission, 2018). At the same time, HE was also marked by the need for constant updates as result of the evolution and technological innovation (and flow of information increase), as well the growing number of students (Slišković & Maslić Seršić, 2011; Sun, Wu, & Wang, 2011; Thorsen, 1996).

All of these factors brought profound changes in teachers' work, requiring constant adjustment to accomplish professional excellence in today HE highly competitive and demanding setting (Kinman, 2001; Slišković & Maslić Seršić, 2011; Thorsen, 1996).

HE teachers are nowadays required to response and perform different roles (*e.g.* teaching, mentoring, hosting internships, conducting research, organizing seminars, carrying out service responsibilities, *etc.*), all of which require a high level of personal, professional and scientific development (Cladellas & Castelló, 2011; Kinman, 2001; Slišković & Maslić Seršić, 2011; Thorsen, 1996).

Besides that, HE teachers' workload is not only associated with the accumulation of functions, but also with the characteristics of each one (Kinman, 2001; Slišković & Maslić Seršić, 2011). Notice that, due to Bologna process, the traditional transfer of unidirectional scientific knowledge is gradually being replace by problem-based learning (Gomes, Brito, & Varela, 2016), or variants of it, witch drastically change the teacher-student iteration. The technologies nowadays play an important role in this interaction (and the classes support)(Sun et al., 2011), but also bring about the accumulation of one more task: besides classes teachers also must provide online information and literature references through the dedicated platforms or *Apps* (e.g. Moodle), as well also requires constant knowledge update regarding these same tools (Kinman, 2001; Slišković & Maslić Seršić, 2011; Sun et al., 2011). In addition, HE teachers are required to work with many students (who are also tend to be demanding), in the most varied situations of the academic course, such as traditional classes, practical classes, internships, master's or doctoral mentoring (Kinman, 2001; Slišković & Maslić Seršić, 2011).

Research, in its turn, is another component of teacher overload, point out as one of the main stressors (Kinman, 2001; Slišković & Maslić Seršić, 2011; Sun et al., 2011). The literature shows that "publishing or perishing" is imperative, resulting from the high relation with the number of published scientific papers and the grant attribution, essential for career progression in the academic setting (Kinman, 2001; Slišković & Maslić Seršić, 2011; Sun et al., 2011).

Teachers also have responsibilities such as administrative functions (Cladellas & Castelló, 2011), positions of leadership and management and coordination positions, that reinforces the role overload and ambiguity (Kinman, 2001; Slišković & Maslić Seršić, 2011). It should be noted that, as this field is particularly competitive, lack of support of colleagues and superiors unsatisfactory management practices (increase of bureaucratic management practices), is one of the PRs of this work context (Kinman, 2001).

Several authors point out other main stressors, as too much paper work combined with lack of human and technological support (Sun et al., 2011), long working hours and work-life balance compromise, poor communication, lack of influence on decision making (Cladellas & Castelló, 2011; Kinman, 2001; Slišković & Maslić Seršić, 2011; Thorsen, 1996), as well as some differences between gender, positions and full-part time job (Slišković & Maslić Seršić, 2011).

Therefore, teachers need to have multi-tasking skills, as well as constant knowledge updating (Kinman, 2001). Lifelong training play an important role in the development of soft skills to deal with today's work demands (Jardim & Pereira, 2016), however, due the large number of distress generators arising from this work-related context, more integrated perspectives must be develop (Cladellas & Castelló, 2011).

It is known that occupational health problems in teachers are current and prevalent (Jardim & Pereira, 2016; Kinman, 2001; Leka & Jain, 2010), cause high work absenteeism, whose consequences do not end at the individual level, but also at the organizational one (Cladellas & Castelló, 2011; Slišković & Maslić Seršić, 2011). Several authors point out the significance of work-related PRs in this phenomenon, however, results are difficult to integrate, perhaps because most of the studies are directed to school-teachers (Kinman, 2001) or centred on the Burnout syndrome (Cladellas & Castelló, 2011). Few studies have focused on the relationship of PRs in an integrative perspective (Kinman, 2001). Furthermore, the number of studies conducted in HE is very limited and, so far, to our knowledge, none have been conducted in Portugal.

### Objectives

In the present study it's sought to explore the psychosocial factors associated with the development of work-related distress in the specific professional context of HE teachers. We intent to understand as well, which PRs dimensions cross the different teacher's roles, act as a predictor for the development of work-related distress. Ultimately, we intend to contribute with scientific evidence in this field, to allow the development of effective prevention and health promotion actions in a holistic and multidisciplinary perspective.

## Methods

### Participants

A empirical study was carried out involving 97 HE teachers, teaching at Aveiro University departments (n=46) and Polytechnic's Schools (n=51), namely School of

Design, Management and Production Technologies Northern Aveiro (ESSAN), Águeda School of Technology and Management (ESTGA) and Higher Institute for Accountancy and Administration (ISCA). The sample comprise 48 males and 49 females, aged 30 to 69 years (M=48.24, DP=7.85). All the sample characteristics can be seen in Table 01.

Table 01
*Demographic and work characteristics of participants.*

| Characteristics | | Total (n=97) | Male (n=48) | Female (n=49) |
|---|---|---|---|---|
| Age (in years) | 30 - 40 | 18 | 7 | 11 |
| | 41 - 50 | 41 | 18 | 23 |
| | 51 - 60 | 32 | 18 | 14 |
| | 61 - 70 | 6 | 5 | 1 |
| Marital Status | Single | 15 | 9 | 6 |
| | Married | 67 | 35 | 32 |
| | Divorced | 14 | 4 | 10 |
| | Widower | 1 | - | 1 |
| Type of School | Aveiro University Departments | 46 | 27 | 19 |
| | Aveiro University Polytechnic Schools | 51 | 21 | 30 |
| Work years | 0-10 | 19 | 8 | 11 |
| | 11-20 | 47 | 27 | 20 |
| | 21-30 | 18 | 6 | 12 |
| | 31-40 | 13 | 7 | 6 |
| Type of Contract | Permanent | 61 | 36 | 25 |
| | Temporary | 36 | 12 | 24 |
| Work schedule | Full-time | 71 | 38 | 33 |
| | Part-time | 26 | 10 | 16 |
| Percentage of work hours | 100 % | 75 | 41 | 34 |
| | 80 % | 1 | - | 1 |
| | 60 % | 8 | - | 6 |
| | 50 % | 3 | 2 | 1 |
| | 40 % | 2 | 2 | 2 |
| | 30 % | 7 | 3 | 4 |
| | 20 % | 1 | - | 1 |
| Quality of life (Mean) | | 3,56 | 3,60 | 3,51 |

## Instruments

### Kessler Psychological Distress Scale (K10).

The K10 (Kessler et al., 2002; Portuguese version by Pereira et al., 2017) is a brief highly reliable scale for assessing non-specific psychological distress. It is a 10-item scale, based on self-reporting of psychological distress symptoms during the last 30 days.

Symptoms are estimated according to a 5-step Likert scale ranging from 1 to 5 (“no day”, “few days”, “some days” “most days”, “every day”), resulting in a total score between 10 and 50. According to Pereira et al. (2017), values equal or above the 22 cut-off point represents a risk of developing a mental disorder. Furthermore, values between 10 to 15 represent absence of or low distress, 16 to 21 mean moderate distress, 22 to 29 portrait high distress and 30 to 50 very high distress. The Portuguese version showed good internal consistency with Cronbach's alpha (α) of 0.910.

### State-Trait Anxiety Inventory (STAI).

The STAI (Spielberger, 1983; Portuguese version by Daniel, Ponciano, Figueirinha, & Spielberger, 2006), is a widely used instrument for evaluating the general anxiety. It is composed by two subscales (STAI-Y1 and STAI-Y2), that correspond to state-anxiety and trait-anxiety respectively.

It consists of a total of 40 questions (20 questions in each subscale), based on the self-reported of psychological anxiety symptoms reported on a 4-step Likert scale, due to its intensity on the present moment (STAI-Y1 - "Nothing", "a little", "moderately", "a lot"), and their habitual frequency (STAI-Y-2 - "almost never", "sometimes", "often", "almost always").

The amplitude of results by subscale varies between 20 and 80, being possible to verify the presence / absence of anxiety clinical significance symptoms whereas value equal or above the cut-off of 40 point. The Portuguese adaptation studies reflect good levels of internal consistency, with α above 0.87 in both subscales (Daniel et al., 2006; D. Silva & Campos, 1998), in the present study it was verified an $\alpha = 0.95$ and $\alpha = 0.89$ for STAI-Y1 and STAI-Y2 respectively.

### Brief Resilient Coping Scale (BRCS).

The BRCS (Sinclair & Wallston, 2004; Portuguese version by de Ribeiro & Morais, 2010), is a brief instrument used to access the capacity to deal with stress in an adaptive way (resilience capacity). Is a one-dimensional scale, consisting of four self-report items,

whose answer is given in five levels Likert format ranging between 1 and 5 from (almost never; occasionally, often, very often, almost always). The magnitude of the results varies between 4 and 20, being that values below 13 are indicative of low resilience, and scores above 17 correspond to strong resilience (Ribeiro & Morais, 2010; Sinclair & Wallston, 2004). The original scale had an internal consistency of 0.68 and in the Portuguese version it presents α= 0.53. In the present work it was verified α= 0, 77.

**Copenhagen Psychosocial Questionnaire (COPSOQ).**

COPSOC, (Kristensen et al., 2005; Portuguese version by Silva et al., 2011) is a highly reliable scale for assessing PRs in the workplace. It is a powerful tool that gathers international consensus on the adequacy for evaluating many of the most important psychosocial dimensions, and differs from other scales, since it systematically approaches the interaction between psychosocial work environment and health, not being based and limited to a specific theoretical model (Fernandes & Pereira, 2016; C. Silva et al., 2011).

The medium version is composed by 76 items distributed in 29 subscales grouped into 8 main dimensions, namely: Labour Demands (quantitative demands, work pace, cognitive demands, emotional Demands); Work organisation and content (Influence on work, opportunities for development, meaning of work, commitment to work); Social relations and leadership (work rewards/recognition, predictability, transparency of labour played role, conflicts of the labour played role, quality of leadership, Support social support from colleagues and supervisors); Interface work-individual (Job insecurity, job satisfaction, work-family Conflict); Workplace values (vertical and horizontal trust, justice and respect, social community at work); Personality (self-efficacy); Offensive behaviours; Health and well-being (overall health, sleeping problems, stress, depressive symptoms and burnout).

The averages of the items of each factor must be calculated and it presupposes the interpretation factor by factor, assuming the interpretation of this value to be different according to the factor / subscale in question. There are subscales where high values represent low risk, and the opposite i.e., high values represent high risk. In addition, each factor can be interpreted by means of the health impact that the exposure represents, in particular: health-friendly situation, intermediate health situation and health risk. For this, the average obtained in a given factor is place in a division of tripartite percentiles, with respective cut-off points of 2.33 and 3.66. In the present study, COPSOQ show good internal consistency with a range between α= 0.64 and α= 0.90 for almost all subscales,

except vertical trust with α= 0. 29, horizontal trust with α= 0. 44 and offensive behaviour with α=0.37.

**Demographic and work characteristics of participants.**

A Sociodemographic questionnaire developed by researchers was applied aimed to collect demographic characteristics (age, gender, marital status), as well informational issues and specificities of the work (type of School, scientific area, work years, type of contract, type of work schedule, percentage of work hours, number of cumulative functions performed, function of greater overload). A question about quality of life was also included, which was answered with 5-step Likert scale ranging from 1 to 5 ("Very bad", "Bad", "Neither good, neither bad" "Good", "Very good").

**Procedures**

Data collection was carried out between March 7 and May 25, 2018. The distribution of the research protocol questionnaires was made on paper and disseminated online through departmental / school secretaries. At the same time, the demographic questionnaire was applied.

All participants were informed of the objectives and voluntary nature of participation, as well as subsequent use of the data collected through informed consent, respecting the ethical and deontological principles inherent in the development of an investigation.

**Data Analysis**

All analyses were done using IBM SPSS Statistics® (version 25). At an early stage, besides descriptive statistics and internal consistency of the scales, normality of distribution were assessed. Compactions between two groups (gender, type of school, type of contact and type of work schedule) were made with nonparametric tests for independent samples Mann-Whitney U test. Several Spearman's correlate analyses were conducted to assess the relation between distress and PRs. Next, given the interest in defining which dimensions best predicted the distress and anxiety, several stepwise multiple regressions were employed.

## Results

Concerning the total number of cumulative functions, results show that most of total respondents accumulate 3 to 5 functions (*M*=3.59; *SD*=1.375). The respective percentage in the total responders was: 27.8% for four cumulative functions, 25.8% for five, 19.6% for three, 12.4% for two 10.3% for one, and 4.1% for six.

Total number of cumulative functions performed is higher on permanent (*Mdn*=4) than temporary contracts (*Mdn*=3), *U*=658.500; *z*=-3.336, ρ<0.001, *r*= -0.342, and higher on full-time work schedule (*Mdn*=4) than part-time work schedule (*Mdn*=2.5), *U*=441.500, *z*=-4.022, *ρ*<0.000, r= -0.408.

Total cumulative functions are correlated with some PRs, namely quantitative demand ($r_s$= .323, *ρ*<.01), transparency of labour played role ($r_s$= -.202, *ρ*<.05), quality of leadership ($r_s$= -.201, *ρ*<.05), job insecurity ($r_s$=-.275, *ρ*<.01), work-family conflict ($r_s$= .291, *ρ*<.01), social community at work ($r_s$=-.200, ρ<.05) and burnout ($r_s$=.205, ρ<.05). Teaching is pointed out as the most overload function with 64.9% of the responder's votes (Table 02).

Table 2.

*Functions distribution and overload*

| | **Function of greater overload (%)** | | | | | |
|---|---|---|---|---|---|---|
| | **1st** | **2nd** | **3rd** | **4th** | **5th** | **6th** |
| Teacher | **64.9** | 9.3 | 8.2 | 1.0 | - | - |
| Research/ investigation | 10.3 | **23.7** | 19.6 | 9.3 | 3.1 | 1.0 |
| Mentoring | - | 16.5 | **22.7** | 12.4 | **10.3** | 1.0 |
| Management functions | 6.2 | 19.6 | 7.2 | **16.5** | 4.1 | - |
| Administrative functions | 1.0 | 7.2 | 8.2 | 7.2 | **9.3** | 2.1 |
| Other | 4.1 | 1.0 | 1.0 | - | 4.1 | **6.2** |
| Total responders (%) | 86.6 | 78.4 | 68.0 | 50.5 | 35.1 | 15.5 |

In the analysis of individual function relationship with distress, anxiety and PRs, many positive and negative correlations were found (Table 3). Administrative and Research roles are the functions with most significant correlations presented. Administrative functions have positive significant correlations with anxiety, quantitative demands, work-family conflict, stress, depressive symptoms and burnout. On the other and it was found negative correlations with predictability, quality of leadership, social support from colleagues and supervisors as well social community at work (Table 03). Research have positive correlations with quantitative demands, work family conflict and burnout. Negative significant correlations were presented with meaning of work, quality of leadership and job satisfaction (Table 03).

Table 03.
*Relation of the functions with anxiety and PRs.*

| | | Teacher | Research | Mentoring | Management | Administrative | Other |
|---|---|---|---|---|---|---|---|
| k10 | | 0.123 | 0.125 | 0.048 | 0.13 | 0.211 | 0.156 |
| BRCS | | 0.035 | -0.188 | -0.039 | -0.051 | 0.01 | -0.155 |
| STAI-Y1 | | 0.099 | 0.122 | 0.182 | 0.056 | **.241*** | 0.082 |
| STAI-Y2 | | 0.113 | 0.07 | 0.087 | 0.046 | **.224*** | 0.064 |
| Work demands | Quantitative demands | -0.138 | **.322**** | **.213*** | **.244*** | **.319**** | 0.029 |
| | Work pace | -0.156 | 0.127 | 0.088 | 0.054 | 0.111 | -0.094 |
| | Cognitive demands | **-.219*** | 0.092 | 0.153 | 0.021 | 0.098 | -0.06 |
| | Emotional demands | -0.048 | 0.056 | 0.096 | -0.052 | 0.098 | -0.078 |
| Organization and content | Influence on Work [a] | -0.057 | -0.112 | 0.054 | 0.001 | -0.198 | -0.206 |
| | Opportunities for development [a] | -0.107 | 0.021 | 0.135 | 0.014 | 0.143 | 0.022 |
| | Meaning of work [a] | -0.155 | **-.250*** | -0.05 | -0.112 | -0.164 | -0.019 |
| | Commitment to work [a] | -0.019 | -0.061 | -0.035 | 0.024 | -0.083 | 0.129 |
| Social relations and leadership | Rewards/recognition [a] | -0.045 | -0.061 | -0.005 | 0.101 | -0.155 | -0.208 |
| | Predictability [a] | 0.045 | -0.044 | 0.071 | -0.105 | **-.220*** | **-.240*** |
| | Transparency of labour played-role [a] | -0.053 | -0.135 | -0.072 | -0.208 | -0.155 | -0.032 |
| | Work conflicts | 0.054 | 0.025 | 0.092 | 0.062 | 0.145 | -0.031 |
| | Quality of leadership [a] | 0.076 | **-.217*** | 0.038 | -0.06 | **-.328**** | **-.245*** |
| | Social support from colleagues [a] | -0.001 | -0.087 | -0.028 | -0.037 | **-.228*** | **-.281*** |
| | Social support from supervisors [a] | -0.029 | -0.127 | 0.114 | -0.144 | **-.291**** | **-.308**** |
| work-individual | Job insecurity | -0.021 | -0.109 | -0.152 | **-.291**** | -0.126 | -0.217 |
| | Job satisfaction [a] | -0.086 | **-.213*** | -0.128 | -0.159 | -0.196 | -0.172 |
| | Work-family conflict | -0.08 | **.266**** | **.297**** | 0.114 | **.272*** | -0.017 |
| Workplace values | Vertical trust [a] | 0.028 | -0.172 | -0.196 | -0.109 | -0.131 | -0.194 |
| | Horizontal trust | -0.057 | 0.197 | 0.174 | 0.055 | 0.206 | 0.161 |
| | Justice and respect [a] | 0.125 | -0.043 | -0.009 | -0.019 | -0.194 | -0.197 |
| | Social community at work [a] | 0.02 | -0.137 | -0.008 | -0.048 | **-.228*** | **-.229*** |
| Personality - Self-efficacy [a] | | -0.143 | -0.109 | 0.032 | -0.052 | -0.193 | -0.19 |
| Offensive behaviours | | -0.115 | 0.091 | 0.09 | -0.012 | 0.145 | 0.119 |
| Health/ well-being | Overall health [a] | 0.152 | 0.047 | -0.01 | -0.041 | 0.195 | 0.026 |
| | Sleeping problems | 0.043 | 0.129 | 0.045 | 0.082 | 0.047 | **.374**** |
| | Stress | 0.081 | 0.126 | 0.167 | 0.128 | **.268*** | 0.118 |
| | Depressive symptoms | 0.001 | 0.131 | 0.136 | 0.186 | **.227*** | 0.198 |
| | Burnout | 0.053 | **.213*** | 0.143 | 0.085 | **.300**** | 0.13 |

a. Positive subscales, high values represent low risk.
* $\rho < 0.05$ **$\rho < 0.01$

Considering the results of distress (K10), the sum values of total responders was mostly below of the 22-point cut-off (*M*=20.89; *SD*= 6.97). It should be note that according to the level of distress outcome of the total responders 39.1% of participants presented significant psychological distress symptoms. More specifically, 11.3% scored very high distress, 27.8% scored high distress, 33% scored moderate distress and 27.8% scored absence or low distress. Concerning gender, distress levels is significant higher on females (*Mdn*=21) than males (*Mdn*=18), *U*= 899.500, *z* =-1.998, *ρ*< 0.046, *r*= -0.203. The results show some differences in percentage according to the level of distress outcome, more specifically 10.4% scored very high distress, 20.8% scored high distress, 29.2% scored moderate distress and 39% of males' responders scored absence or low distress. On the other hand, according to the level of distress outcome of the females' responders 46.9% of female participants presented significant psychological distress symptoms. More specifically, 12.2% scored very high distress, 34.7% high distress, 34.7% scored moderate distress and 16.3% scored absence or low distress (Figure 02).

Considering the results of resilient cope (BCRS) the sum values of total responders was within range of the 13-17 cut- off points (*M*=13.53, *SD*=3.25), corresponding to moderate resilience cope capacity. The results show some differences in the percentage according to the level of resilient cope capacity outcome of the total responders, namely: 51.5% scored low resilient cope capacity, 28.7% scored moderate resilient cope capacity and 20.6% scored strong resilient cope capacity (Figure 02).

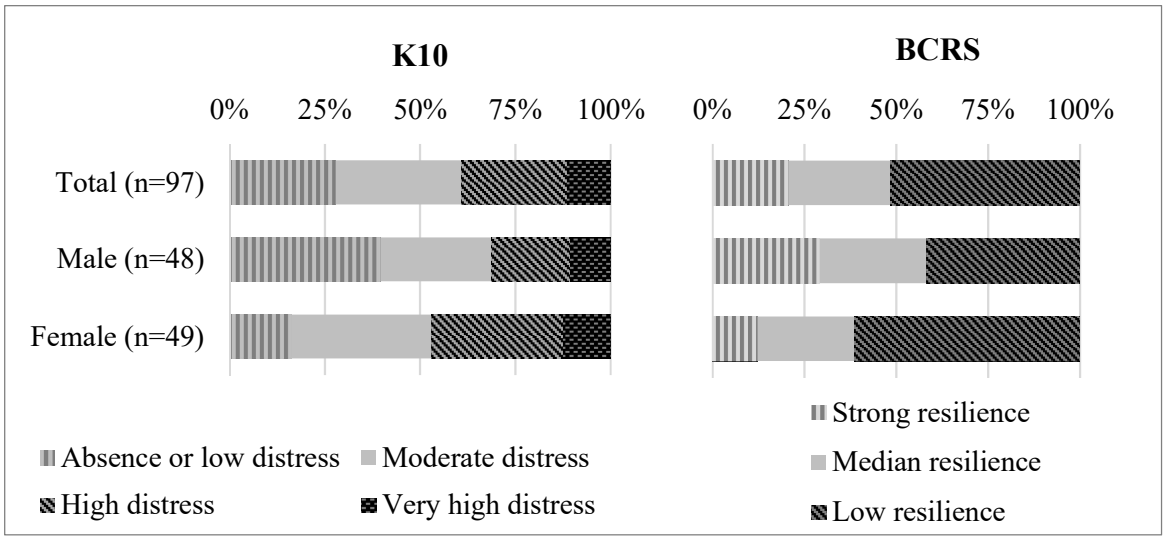


*Figure 02*. Level of distress and resilient cope capacity.

Regarding the results of state-anxiety (STAI-Y1-intensity of symptoms), the sum values of total responders was majority above the 40-point cut-off (*M*=42.51, *SD*=12.22). It should be note that 56.7% of participants presented anxiety intensity symptoms with clinical significance and 43.3% scored absence or low anxiety. Regarding values on gender, state-anxiety on females (*Mdn*=43) was higher than in males (*Mdn*=35.5), *U*=828.000; *z*=-2.513, *ρ*< 0.012, *r*=-0.255. Concerning the level of state-anxiety outcome of the males' responders, 41.7% scored anxiety intensity symptoms with clinical significance and 58.3% scored absence or low anxiety. Comparatively, the outcome of the females' responders was: 71.4% scored anxiety intensity symptoms with clinical significance and 28.6% scored absence or low anxiety (Figures 03).

According to the results of trait-anxiety (STAI-Y2-frequency of symptoms), the sum values of total responders was majority above the 40-point cut-off (*M*=44.91, *SD*=9.63). Regarding the percentage according to the level of trait-anxiety outcome of the total responders, 77.3% scored anxiety frequency symptoms with clinical significance and 22.7% scored absence or low anxiety. Concerning gender, trait-anxiety on females (*Mdn*=46) is higher than on males (*Mdn*=40), *U*=746.000; *z*= -3.106, *ρ*< 0.002, r=-0.315. According to the level of trait-anxiety outcome of the males' responders, 64.6% scored anxiety frequency symptoms with clinical significance and 41.7% scored absence or low anxiety. Regarding females' responders, 89.8% scored anxiety frequency symptoms with clinical significance and 10.2% scored absence or low anxiety (Figure 03).

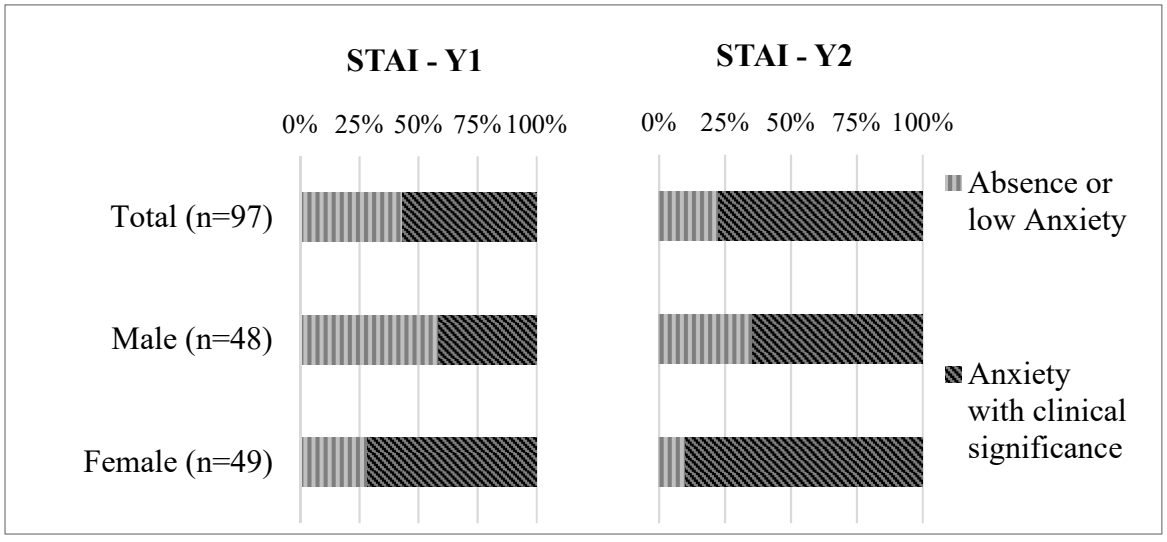


*Figure 03.* Anxiety level.

Considering PRs results (COPSOQ), in the interpretation by health impact that the exposure represents, it should be note that total responders presented intermediate health situation in most PRs dimensions (values between 2.33 to 3.66). In the dimensions of opportunities for development, meaning of work, transparency of labour played-role, self-efficacy, offensive behaviours and depressive symptoms total responders presented health-friendly situation (values under 2.33 or above 3.66 for positive subscales). In the work demands dimensions of work pace, cognitive demands and emotional demands total responders presented health risk (values above 3.66) (Figure 04).

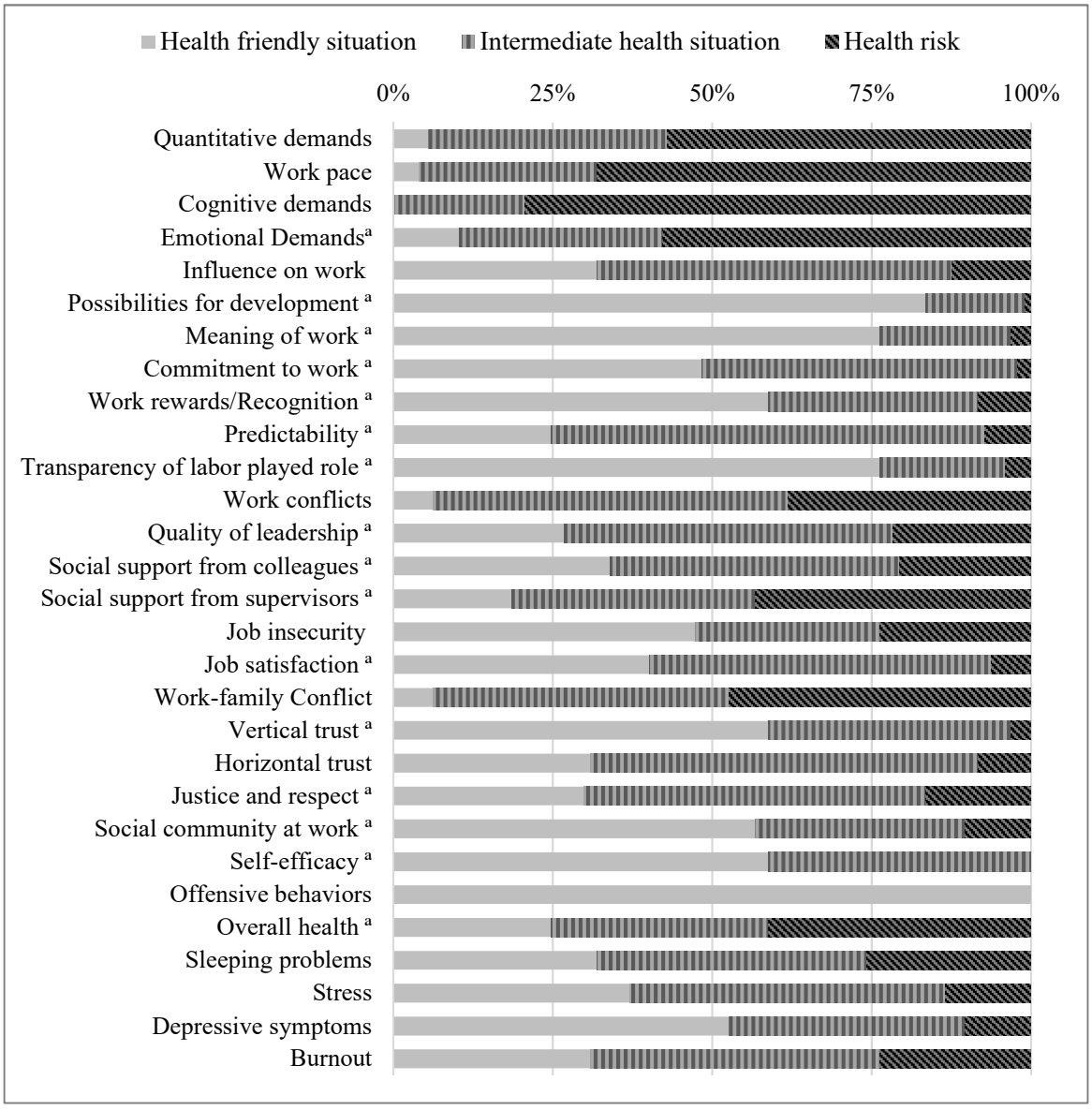


*Figure04*.Interpretation of COPSOQ by means of the health impact that PRs exposure represents.

a. Positive subscales, high values represent low risk.

There are some differences on the comparisons of the present study subscales means with the Portuguese teacher's normative data (Figure 05). Since the COPSOQ manual isn't specify the level of teaching in which the included teachers work, no statistical analysis of the comparison of means is presented.

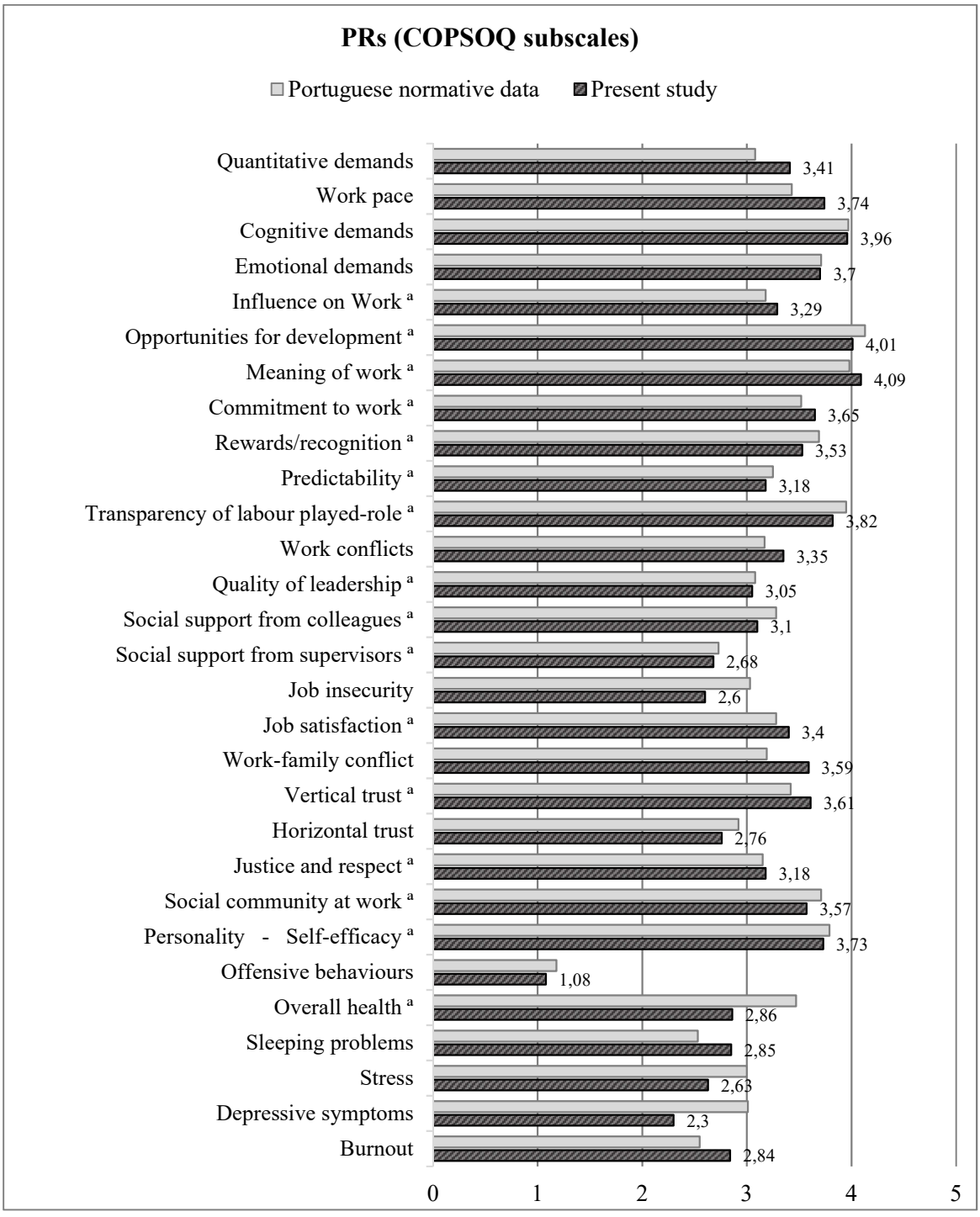


*Figure 05.* Comparisons of the present study COPSOQ average with the Portuguese normative data. The presented means correspond to those of the present study.

a. Positive subscales, high values represent low risk.

On the compactions between gender groups, the dimensions of emotional demands are significant higher on females (*Mdn*=4.00) than males (*Mdn*=3.375), *U*=897.500*; z*= -2.083*,* $\rho$<0.037, *r*=-0.212, job insecurity is higher on females (*Mdn*=3.00) than males (*Mdn*=2.00), U=836.500; z=-2.52, ρ<0.012, r=-0.256, stress is higher on females (Mdn=3.00) than males (Mdn=2.25), *U*=880.500, *z*= -2.163, $\rho$<0.031, *r*= -0.220), burnout was higher on females (*Mdn*=3.00) than males (*Mdn*=2.50), *U*= 694.000, *z*= -3.533, $\rho$<0.000, *r*= -0.359, influence on work is higher in males (*Mdn*= 3.50) than females (*Mdn*=3.25), *U*=799.500; *z*=-2.737, $\rho$< 0.006, *r*= -0.278, as well conflicts of the labour played-role is significant higher on males (*Mdn*=3.33) than on females (*Mdn*=3.00), *U*=827.000; *z*= -2.564, $\rho$< 0.010, *r*= -0.260.

Comparatively on type of contact, on the dimensions of conflicts work played-role is higher on permanent (*Mdn*=3.33) than temporary contract (*Mdn*=3.00), *U*=780.000, *z*=-2.417, $\rho$<0,016, *r*= -0.245, and job insecurity was lower on permanent (*Mdn*= 2.00) than temporary (*Mdn*= 3.00) (*U*=430.0, *z*=-5.127, $\rho$<0.000, *r*= -0.521).

Concerning type of work schedule, on the dimensions of quantitative demands are higher on full-time (*Mdn*=3.67) than part-time (*Mdn*=3.00), *U*=633.500, z=-2.406, ρ<0.0016, r=-0.245, social support from supervisors is lower on full-time (*Mdn*=2.67) than part-time (*Mdn*=3.00), *U*=634.000, *z*=-2.39*,* $\rho$<0.017, *r*=0.243, job insecurity is lower on full time (*Mdn*=2.00) than part-time (*Mdn*=3.00), *U*=534.000, *z*=-3.259, $\rho$<0.001, *r*= -0.331, job satisfaction was lower on full-time (*Mdn*=3.25) than part-time work schedule (*Mdn*=4), *U*=610.000, *z*= -2.575, $\rho$<0.010, *r*= -0.261.

Many positive and negative correlations were found between distress, resilience cope capacity, state-trait anxiety and the PRs. Regarding distress, significant correlations was found with state-anxiety ($r_s$= .759, $\rho$<.01), trait-anxiety ($r_s$= .775, $\rho$< .01), as well work demands, and health/ well-being PRs dimensions present the most of significant correlations for distress increase (Table 04).

Resilient cope presents significant correlation with state anxiety ($r_s$= -.217, $\rho$<.05), trait-anxiety ($r_s$= -.342, $\rho$< .01), as well with many significant positive correlations with positive dimension of COPSOQ PRs assessment (Table 04).

State-trait anxiety have many negative and positive correlations with the PRs of the social relations and leadership, interface work-individual, as well health and well-being dimension (Table 04).

Table 04.
*Relation of distress, anxiety and resilience cope with PRs.*

| PRs (COPSOQ subscales) | | Distress | Resilient cope | Anxiety | |
|---|---|---|---|---|---|
| | | | | State | Trait |
| Work demands | Quantitative demands | **.368**** | -0.125 | **.322**** | **.359**** |
| | Work pace | **.301**** | 0.061 | **.275**** | 0.183 |
| | Cognitive demands | 0.16 | **.218*** | 0.137 | 0.1 |
| | Emotional demands | **.381**** | 0.131 | **.325**** | **.327**** |
| Organization and content | Influence on Work [a] | **-.314**** | **.285**** | **-.360**** | **-.421**** |
| | Opportunities for development [a] | -0.131 | .258* | -0.145 | -0.188 |
| | Meaning of work [a] | **-.354**** | **.281**** | **-.361**** | **-.365**** |
| | Commitment to work [a] | **-.208*** | 0.164 | -0.14 | -0.151 |
| Social relations and leadership | Rewards/recognition [a] | **-.258*** | 0.191 | **-.287**** | **-.313**** |
| | Predictability [a] | **-.287**** | **.232*** | **-.311**** | **-.359**** |
| | Transparency of labour played-role [a] | **-.263**** | 0.158 | -0.18 | **-.204*** |
| | Work conflicts | 0.183 | 0.135 | **.279**** | **.223*** |
| | Quality of leadership [a] | -0.149 | **.358**** | **-.230*** | **-.250*** |
| | Social support from colleagues [a] | **-.253*** | 0.156 | **-.324**** | **-.289**** |
| | Social support from supervisors [a] | **-.275**** | 0.196 | **-.302**** | **-.365**** |
| Interface work-individual | Job insecurity | **.220*** | -0.116 | **.223*** | **.246*** |
| | Job satisfaction [a] | **-.405**** | **.208*** | **-.420**** | **-.452**** |
| | Work-family conflict | **.432**** | -0.009 | **.467**** | **.429**** |
| Workplace values | Vertical trust [a] | -0.131 | 0.153 | -0.187 | -0.058 |
| | Horizontal trust | 0.178 | -0.176 | **.202*** | 0.097 |
| | Justice and respect [a] | -0.17 | **.271**** | **-.237*** | **-.243*** |
| | Social community at work [a] | **-.245*** | **.265**** | **-.235*** | **-.270**** |
| Personality - Self-efficacy [a] | | -0.136 | **.420**** | **-.258*** | **-.323**** |
| Offensive behaviours | | **.245*** | 0.106 | 0.122 | 0.078 |
| Health/ well-being | Overall health [a] | **.466**** | -0.09 | **.332**** | **.391**** |
| | Sleeping problems | **.634**** | **-.296**** | **.616**** | **.616**** |
| | Stress | **.727**** | **-.256*** | **.727**** | **.754**** |
| | Depressive symptoms | **.704**** | -0.141 | **.651**** | **.685**** |
| | Burnout | **.689**** | **-.243*** | **.650**** | **.727**** |

* $\rho < 0.05$ **$\rho < 0.01$

a. Positive subscales, high values represent low risk.

Stepwise multiple regressions were employed to test if the PRs, total cumulative functions and resilient cope significantly predicted participants' ratings of distress and state-trait anxiety. In the first set of analysis we searched witch PRs variables by themselves (without health variables), significantly predicted participants' ratings, therefore the wealth/ well been dimension of COPSOQ were excluded.

Concerning to distress, the results of the regression indicated that three predictors explained 41.9% of the variance [$F$ (3,93) = 22.321, $p$<.000, $R^2$ =.419]. It was found that work-family conflict, meaning of work, as did emotional demands predict distress levels.

Concerning to state-anxiety, five predictors explained 45.5% of the variance [$F$ (6,90) = 12.524, $p$<.000 $R^2$ =.455]. It was found that work-family conflict, meaning of work emotional demands, social support from colleagues, social community at work, as well resilient cope predicted state-anxiety levels. Concerning trait-anxiety, six predictors explained 54.0% of the variance [$F$ (6,90) = 17.595, $p$<.000 $R^2$ =.540]. It was found that meaning of work, resilient cope, emotional demands, vertical trust and job satisfaction predicted trait anxiety levels (Table 05).

Table 05.
*Predictive models without health/ well-being dimensions.*

| DV | Preditor | *B* | *SE* | *β* | *t* | *ρ* |
|---|---|---|---|---|---|---|
| Distress (K10) | Work-family conflict | 2.777 | 0.774 | 0.314 | 3.588 | 0.001 |
| | Meaning of work [a] | -3.719 | 0.721 | -0.411 | -5.158 | .000 |
| | Emotional demands | 2.105 | 0.643 | 0.286 | 3.272 | 0.002 |
| State Anxiety (STAI-Y1) | Work-family conflict | 5 | 1.377 | 0.322 | 3.632 | .000 |
| | Meaning of work [a] | -6.199 | 1.435 | -0.391 | -4.32 | 0.00 |
| | Emotional demands | 3.337 | 1.135 | 0.259 | 2.941 | 0.004 |
| | Social support from colleagues [a] | -4.985 | 1.643 | -0.31 | -3.034 | 0.003 |
| | Social community at work [a] | 4.076 | 1.729 | 0.267 | 2.357 | 0.021 |
| | BRCS | -0.664 | 0.312 | -0.177 | -2.127 | 0.036 |
| Trait Anxiety (STAI-Y2) | Meaning of work [a] | -4.53 | 1.155 | -0.362 | -3.923 | .000 |
| | Work-family conflict | 3.523 | 0.972 | 0.288 | 3.624 | .000 |
| | BRCS | -0.816 | 0.223 | -0.275 | -3.65 | .000 |
| | Emotional demands | 2.596 | 0.821 | 0.256 | 3.163 | 0.002 |
| | Vertical trust [a] | 4.91 | 1.451 | 0.283 | 3.384 | 0.001 |
| | Job satisfaction [a] | -3.486 | 1.315 | -0.243 | -2.652 | 0.009 |

a. Positive subscales, high values represent low risk

In the second set of analysis all dimensions of PRs assessed with COPSOQ were include. Concerning to distress, the results of the regression indicated eight predictors that explain 87.7 % of the variance [$F$ (8,88) = 36.463, $p$<.000, $R^2$ =.877]. It was found that depressive symptoms, stress, meaning of work, sleeping problems, self-efficacy, overall health, vertical trust, as did transparency of labor played-role predict distress levels (Table 05). Regarding state-anxiety, five predictors that explain 67.3% of the variance were found [$F$ (7,89) =

28.190, $p<.000$ $R^2$ =.673]. Stress, sleeping problems, depressive symptoms, meaning of work, as did commitment to work predicted state anxiety levels. Concerning trait-anxiety, nine predictors explained 77.7% of the variance [$F$ (9,87) = 33.589, $p<.000$ $R^2$ =.777]. It was found that stress, depressive symptoms, meaning of work, vertical trust, sleeping problems, commitment to work, self-efficacy, job satisfaction and offensive behaviors predicted trait-anxiety levels (Table 06).

Table 06.
*Predictive models with health/well-being dimensions.*

| | Preditor | *B* | *SE* | *β* | *t* | *ρ* |
|---|---|---|---|---|---|---|
| Distress (K10) | Depressive symptoms | 2.971 | 0.555 | 0.398 | 5.352 | .000 |
| | Stress | 1.918 | 0.578 | 0.256 | 3.315 | 0.001 |
| | Meaning of work [a] | -2.103 | 0.609 | -0.232 | -3.454 | 0.001 |
| | Sleeping problems | 1.374 | 0.421 | 0.211 | 3.261 | 0.002 |
| | Self-efficacy [a] | 1.5 | 0.657 | 0.131 | 2.282 | 0.025 |
| | Overall health [a] | 1.112 | 0.453 | 0.142 | 2.454 | 0.016 |
| | Vertical trust [a] | 2.387 | 0.774 | 0.19 | 3.085 | 0.003 |
| | Transparency of labour played-role [a] | -1.435 | 0.619 | -0.138 | -2.319 | 0.023 |
| State Anxiety (STAI-Y1) | Stress | 5.37 | 1.176 | 0.409 | 4.565 | .000 |
| | Sleeping problems | 2.742 | 0.864 | 0.24 | 3.173 | 0.002 |
| | Depressive symptoms | 2.865 | 1.114 | 0.219 | 2.571 | 0.012 |
| | Meaning of work [a] | -4.252 | 1.159 | -0.268 | -3.668 | .000 |
| | Commitment to work [a] | 3.396 | 1.194 | 0.203 | 2.844 | 0.006 |
| Trait Anxiety (STAI-Y2) | Stress | 4.144 | 0.792 | 0.4 | 5.236 | .000 |
| | Depressive symptoms | 2.407 | 0.763 | 0.233 | 3.156 | 0.002 |
| | Meaning of work a | -3.535 | 0.909 | -0.283 | -3.889 | .000 |
| | Vertical trust [a] | 4.339 | 1.04 | 0.25 | 4.171 | .000 |
| | Sleeping problems | 1.865 | 0.583 | 0.207 | 3.202 | 0.002 |
| | Commitment to work [a] | 2.472 | 0.805 | 0.187 | 3.07 | 0.003 |
| | Self-efficacy [a] | -1.73 | 0.905 | -0.109 | -1.912 | 0.059 |
| | Job satisfaction [a] | -3.119 | 1.04 | -0.218 | -3 | 0.004 |
| | Offensive behaviours | -8.904 | 3.168 | -0.159 | -2.811 | 0.006 |

a. Positive subscales, high values represent low risk

## Discussion

To our knowledge, the present study is the first to assess the prevalence of distress and PRs in Portuguese HE teachers. Our study points main findings: 1) total cumulative functions plays a role in HE teacher's overload; 2) a large percentage of responders presented significant psychological distress and anxiety symptoms, being this effect

strongly higher in females; 3) work demands dimensions represent the most health risk, as well, with health/ well-being dimensions present the most of significant correlations for distress increase in HE teachers; 4) Work-family conflict, meaning of work, emotional demands depressive symptoms, stress and sleeping problems are significant predictors of both distress and anxiety levels.

Our study shows that most of total respondents accumulating between 3 to 5 functions. Total cumulative functions are correlated with anxiety levels, as well some PRs. Notice that, the correlated PRs are some of the dimensions whose averages are above of the Portuguese normative data, that presents high percentages of health impact. These results are congruent to several study's that report work overload strongly effect on occupational stress (Kinman, 2001; Slišković & Maslić Seršić, 2011; Sun et al., 2011). It should be note that in most studies the work overload is analyzed through the number of working hours. Indeed, in our study, type of work schedule as well type of contract plays a role in this effect: full-time work schedule shows a significant increase of quantitative demands, as well decrease of social support from supervisors, job satisfaction, when compared to part-time work schedule. Additionally, type of contact permanent shows a significant increase of work played-role conflicts. However, we highlight that, in our study, we focus on total number of cumulative functions performed. Notice that multi-tasking and respective switching of attention can impair brain activity and overload, increasing the subjective sense of fatigue and stress (Lahnakoski, Jääskeläinen, Sams, & Nummenmaa, 2017; Robert & Hockey, 1997), which is not directly linked to many hours of work. Thus, we can conclude that HE teacher cumulative functions overloads play a role in the increase of work-related distress, anxiety as well the subjective PRs increase.

As in other studies, administrative and research functions are the roles with most correlations with and PRs and anxiety (Slišković & Maslić Seršić, 2011; Sun et al., 2011; Thorsen, 1996). Observe that majority of the correlated PRs also present high percentages of health impact, as well are significant correlated with distress levels. In fact, its pointed out that the increase of bureaucratic aspects, combine with lack of human and material resources due the administrative cut-down leave a substantial paper work to teachers, which represents an overload increase. (Slišković & Maslić Seršić, 2011). Regarding research results are congruent with another studies that point out this function as a main stress generator (Slišković & Maslić Seršić, 2011; Sun et al., 2011; Thorsen, 1996). The high

relation of the number of published scientific papers and grant attribution, essential for career progression in the academic, combine with lack of research founds setting could be the origin of this effect (Kinman, 2001; Slišković & Maslić Seršić, 2011; Sun et al., 2011).

It's worth pointing out that, we found that teaching is pointed has the most subjective overload function. Notice that, the called the Bologna Process, has led to a profound transformation of the HE and training system in Europe, in a collective effort of all involved, such as teachers (European Commission/EACEA/Eurydice, 2015; European Commission, 2018). Additionally, there are drastically changes the teacher-student iteration due technological evolution and increase of student's number (in the most varied situations of the academic course) (Kinman, 2001). Besides classes, there are also teacher-specific extra work demands, such as prepare lectures with constant knowledge updating and provide online information and literature references through the dedicated platforms as well as (Kinman, 2001; Slišković & Maslić Seršić, 2011).

Regarding distress and anxiety, we found that a large percentage of responders presented significant symptoms. Distress as also many positive and negative correlations with the PRs dimensions of Work demands, interface work-individual and Health/ Well-being dimensions. On the other and anxiety increase are largely influenced by interface work-individual and health/ well-being dimensions, while social relations and leadership plays a significant role on anxiety decrease. Notice that both older and recent studies demonstrate similar effects, demonstrating that like this profession in indeed stressful. (Sun et al., 2011; Thorsen, 1996).

Additionally, significant psychological distress and particularly anxiety symptoms are strongly higher in females, being these results congruities with most of the studies in this field (Kinman, 2001; Slišković & Maslić Seršić, 2011; Sun et al., 2011; Thorsen, 1996). This may be also correlate with differences found on the compactions between gender groups, in the PRs factors of Emotional demands, Job insecurity, Influence on Work, Stress and Burnout.

Regarding PRs health impact, work demand and health/ well-being are the dimensions with most PRs in which total responders presented health impact risk. Similar results were found in other studies (Kinman, 2001; Sun et al., 2011), showing what it seems to be a vicious cycle were work-related stressors impair mental health, as well poor mental health impair the subjective perception of work-related characteristics which acting as stressor

generator (Sun et al., 2011). The importance of health/ well-being in this effect can also see in the increase of percentage of variance explained by models that include this dimension. It´s important to point out that depressive symptoms, stress and sleeping problems are significant predictors of both distress and anxiety levels. This same effect was found in the PRs (when considered alone), specifically work-family conflict, meaning of work and emotional demands also have significant predictive value in both distress and anxiety. Another important finding was the presence on resilient cope as predictor of anxiety, confirming that this effect isn't limited to the types or number of work environment factors. These main findings confirm that there are some specific main domains that should be considered, not only in mental illness prevention as well mental health promotion, as proposed by European Agency for Safety and Health at Work (EU-OSHA, 2017, 2018; Leka & Cox, 2008; Leka & Jain, 2010; World Health Organiztion [WHO], 2013).

In general, the present study also confirms that occupational health, results from a complex relationship that includes multiple aspects that should be considered in an integrative way, as well the adopted method show good capacity to fit in the transactional models. The findings of present study are a preoccupant given that, it´s well known relation between characteristics of the work (such as demands) and worker health (Leka & Cox, 2008), as well the exposure to persistent distress has the potential to adversely affect physical, psychological and social well-being, causing the illness, as well, compromise the quality of work performance and personal development (Cladellas & Castelló, 2011; Cox, 1993; Cox & Griffiths, 2010; EU-OSHA, 2018; Hassard et al., 2011; Kinman, 2001; Leka & Jain, 2010). Notice that, despise that higher-income countries were more likely to include workplace components in their programs for mental health (Leka & Cox, 2008), policy for mental health (and respective plans of action), were the least represented in policy's framework in European countries (WHO, 2013).

Given that this study as mostly an online survey, it may have been limitations. Only 16.7% of the total Aveiro University teachers responded, raising issues about the representatives of the sample. Besides that, we highlight the auto-selection of the participants: as the survey was about stress at work, it may attract responders who may feel more exposed to him. Furthermore, the questionnaires are composed by closed questions and so there is no opportunity to gather more enriching information.

Further research must overcome the limitations: increase the number of the sample, as well as diversify the collection of data for other HEs in Portugal. In addition, focus group integration / interviews with some teachers seems appropriate to gather greater wealth of information about the work context and help understand some PR factors.

It is also important the development of effective prevention and health promotion actions in a holistic and multidisciplinary perspective. We call particular attention to anxiety and the respective high percentage presented in the respondents. As such, in addition to primary intervention (prevention), it is also necessary to act at the secondary and tertiary levels. Recent studies demonstrate the efficacy of biofeedback as an interventional model in anxiety and distress (Chaló, 2013; Chaló, Pereira, Batista, & Sancho, 2017; Chaló, Pereira, Sancho, & Mateus, 2016; Ribeiro, 2013). Challó et al., (2016) verified the efficacy of this tool in a university context, demonstrating that with only 8 biweekly sessions, it is possible to obtain a result of 100% in relation to the decrease of anxiety. Biofeedback has also shown to be effective applied exclusively, or in comparison with other intervention techniques (Chaló et al., 2017). This intervention model adopts a perspective focused on the self-control of the psychophysiological symptomatology resulting from distress and anxiety. We emphasize this technique by constituting itself as a non-invasive therapy, and easy operationalization, which allows the individual to identify and become aware of the several psychophysiological reactions inherent in anxiety processes, aiming for greater control under the body and its manifestations. This greater understanding translates into increased confidence and control, which in turn may have a positive impact on the subjective perception of stressors (Chaló, 2013; Chaló et al 2016, 2017; Ribeiro, 2013). Future studies may study the suitability of a biofeedback program to explore the feasibility of this intervention for context in this specific context.

## Conclusion

This study shows that HE teachers have high levels of work-related distress, special females. Number of cumulative functions performed play a role in this phenomenon. However, PRs play main correlate interactions. These findings need confirmation by more extensive samples supported more systematic assessments, sinking the contribute with scientific evidence in this field, to allow the development of effective prevention and health promotion actions in a holistic and multidisciplinary perspective.

## References

Burr, H., Albertsen, K., Rugulies, R., & Hannerz, H. (2010). Do dimensions from the Copenhagen Psychosocial Questionnaire predict vitality and mental health over and above the job strain and effort-reward imbalance models? *Scandinavian Journal of Public Health*, *38*(SUPPL. 3), 59–68. https://doi.org/10.1177/1403494809353436

Caplan, R. D. (1987). Person-Environment Fit Theory and Organizations: Commensurate Dimensions, Time Perspectives, and Mechanisms. *Journal of Vocational Behavior*, *31*, 248–267.

Chaló, P. A. F. (2013). Biofeedback na prevenção da ansiedade em alunos universitários. Retrieved from http://ria.ua.pt/handle/10773/11556

Chaló, P., Pereira, A., Batista, P., & Sancho, L. (2017). Brief Biofeedback Intervention on Anxious Freshman University Students. Applied Psychophysiology Biofeedback, 42(3), 163–168. http://doi.org/10.1007/s10484-017-9361-5

Chaló, P., Pereira, A., Sancho, L., & Mateus, H. (2016). Biofeedback e ansiedade no ensino superior: comparação da eficácia entre dois programas breves. Psicologia, Saúde & Doenças, 17(1), 60–66. http://doi.org/10.15309/15psd170109

Cladellas, R., & Castelló, A. (2011). University Professors' Stress and Perceived State of Health in Relation to Teaching Schedules. *Electronic Journal of Research in Educational PsychologyElectronic Journal of Research in Educational Psychology*, *9*(23), 217–240.

Cox, T. (1993). *Stress Research and Stress Management: Putting theory to work*. Norwich: Health and Safety Executive. (HSE Contract Research Report No 61/1993). Retrieved from http://www.hse.gov.uk/research/crr_pdf/1993/crr93061.pdf

Cox, T., & Griffiths, A. (2010). Work-Related Stress: A Theoretical Perspective. In S. Leka & J. Houdmont (Eds.), *Occupational Health Psychology* (pp. 31–56). Wiley-Blackwell Publishing Ltd. Retrieved from file:///C:/Users/filipe/Downloads/Occupational Health Psychology.pdf

Daniel, F., Ponciano, E., Figueirinha, R., & Spielberger, C. (2006). Estrutura Fatorial de uma Versão Experiemntal do STAI-Y de Spielberger em Estudantes Universitários Portugueses. In J. Tavares, A. Pereira, C. Fernandes, & S. Monteiro (Eds.), *Activação do Desenvolvimento Psicológico - Atas do Simpósio Internacional* (pp. 144–150). Aveiro: Universidade de Aveiro.

Edwards, J. R., Caplan, R. D., & Harrison, R. Van. (1998). Person-environment fit theory: Conceptual foundations, empirical evidence, and directions for future research. In C. L. Cooper (Ed.), *Theories of organizational stress* (pp. 28–67). Oxford: Oxford University Pres. Retrieved from http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.472.4321&rep=rep1&type=pdf

European Agency for Safety and Health at Work [EU-OSHA]. (2017). Psychosocial risks and stress at work - Safety and health at work. Retrieved January 30, 2018, from https://osha.europa.eu/en/themes/psychosocial-risks-and-stress

European Agency for Safety and Health at Work [EU-OSHA]. (2018). Psychosocial risks and stress at work - Safety and health at work - EU-OSHA. Retrieved January 30, 2018, from https://osha.europa.eu/en/themes/psychosocial-risks-and-stress

European Commission/EACEA/Eurydice. (2015). *European Higher Education Area in 2015: Bologna Process Implementation Report*. Luxembourg:Publications Office of the European Union. https://doi.org/10.2797/128576

European Commission. (2018). The Bologna Process and the European Higher Education Area. Retrieved May 9, 2018, from http://ec.europa.eu/education/policy/higher-education/bologna-process_en

Fernandes, C., & Pereira, A. (2016). Exposure to psychosocial risk factors in the context of work: a systematic review. *Revista de Saúde Pública*, *50*(0), 1–15. https://doi.org/10.1590/S1518-8787.2016050006129

Gomes, R. M., Brito, E., & Varela, A. (2016). Intervenção na Formação no Ensino Superior: A aprendizagem baseada em problemas (PBL). *Interacções*, *12*(42), 44–57. Retrieved from http://revistas.rcaap.pt/interaccoes/article/view/11812/9024

Hassard, J., Cox, T., Murawski, S., De Meyer, S., & Muylaert, K. (2011). *Mental health promotion in the workplace – A good practice report*. (European Agency for Safety and Health at Work (EU-OSHA), Ed.), *Safety And Health*. European Agency for Safety and Health at Work (EU-OSHA). https://doi.org/10.2802/78228

Jardim, J., & Pereira, A. (2016). Perceived impact of lifelong training in teachers. *Interacções*, *31*(42), 22–31.

Karasek, R. A. (1979). Job Demands, Job Decision Latitude, and Mental Strain: Implications for Job Redesign. *Administrative Science Quarterly*, *24*(2), 285.

https://doi.org/10.2307/2392498

Kessler, R. C., Andrews, G., Colpe, L. J., Hiripi, E., Mroczek, D. K., Normand, S. L. T., … Zaslavsky, A. M. (2002). Short screening scales to monitor population prevalences and trends in non-specific psychological distress. *Psychological Medicine*, *32*(6), 959–976. Retrieved from http://www.ncbi.nlm.nih.gov/pubmed/12214795

Kinman, G. (2001). Pressure Points: A review of research on stressors and strains in UK academics. *Educational Psychology*, *21*(4), 473–492. https://doi.org/10.1080/01443410120090849

Kristensen, T. S., Hannerz, H., Høgh, A., & Borg, V. (2005). The Copenhagen Psychosocial Questionnaire—a tool for the assessment and improvement of the psychosocial work environment. *Scandinavian Journal of Work, Environment & Health*, *31*(6), 438–449. https://doi.org/10.5271/sjweh.948

Lahnakoski, J. M., Jääskeläinen, L. P., Sams, M., & Nummenmaa, L. (2017). Neural Mechanisms for Integrating Consecutive and Interleaved Natural Events. *Human*, *38*, 3360–3376. https://doi.org/10.1002/hbm.23591

Leka, S., & Cox, T. (2008). *The European Framework for Psychosocial Risk Management : PRIMA-EF*. Nottingham: Institute of Work, Health & Organisations.

Leka, S., & Jain, A. (2010). *Health impact of psychosocial hazards at work: an overview*. Geneva. Retrieved from http://apps.who.int/iris/bitstream/handle/10665/44428/9789241500272_eng.pdf;jsessionid=F4636BCB81D48D4DE9F95E506469FCE6?sequence=1

Pereira, A., Oliveira, C. A., Vagos, P., Bártolo, A., Jardim, J., & Monteiro, S. (2017). Reliability and Factor Structure of the 10-item Kessler Psychological Distress Scale (K10) among Portuguese adults. *Revista Ciência e Saúde Coletiva*. https://doi.org/0191/2017-14138123.39075643801200

Ribeiro, J. L. P., & Morais, R. (2010). Adaptação portuguesa da escala breve de coping resiliente. *Psicologia, Saúde & Doenças*, *11*(1), 5–13.

Ribeiro, L. N. S. (2013). Estudo da ansiedade em alunos do ensino superior utilizando o Biofeedback [Universidade de Aveiro: Tese de Doutoramento].

Robert, G., & Hockey, J. (1997). Compensatory control in the regulation of human performance under stress and high workload: A cognitive-energetical framework. *Biological Psychology*, *45*, 73–93. Retrieved from https://ac.els-

cdn.com/S0301051196052234/1-s2.0-S0301051196052234-main.pdf?_tid=c95a567d-1144-40fa-9c1a-ae96c49168db&acdnat=1528011183_0b45f335023083b323e90b107ce2301d

Siegrist, J. (1996). Adverse health effects of high-effort / low-reward conditions. *Journal of Occupational Health Psychology*, *1*(1), 27–41. https://doi.org/10.1037/1076-8998.1.1.27

Silva, C., Amaral, V., Pereira, A., Bem-haja, P., Pereira, A., Rodrigues, V., … (1). (2011). *Copenhagen Psychosocial Questionnaire: Portugal e Países Africanos de Língua Oficial Portuguesa*. (FCT - Fundação para Ciencia e Tecnologia, Ed.). Aveiro: Departamento de Educação: Universidade de Aveiro. Retrieved from http://aciff.pt/uploads/Copenhagen psychosocial questionnarie_COPSOQ.pdf

Sinclair, V. G., & Wallston, K. A. (2004). The development and psychometric evaluation of the Brief Resilience Scale. *Assesment*, *11*(1), 94–101. https://doi.org/25814410.1177/1073191103258144

Slišković, A., & Maslić Seršić, D. (2011). Work stress among university teachers: Gender and position differences. *Arhiv Za Higijenu Rada i Toksikologiju*, *62*(4), 299–307. https://doi.org/10.2478/10004-1254-62-2011-2135

Spielberger, C. (1983). *Manual for the State-Trait Anxiety Inventory STAI (Form Y) ("Self-Evaluation Questionnaire")*. Palo Alto: Consulting Psychologists Press, Inc.

Sun, W., Wu, H., & Wang, L. (2011). Occupational stress and its related factors among university teachers in China. *Journal of Occupational Health*, *53*(4), 280–286. https://doi.org/10.1539/joh.10-0058-OA

Thorsen, E. (1996). Stress in academe: What bothers professors? *Higher Education*, *31*, 471–489.

World Health Organiztion [WHO]. (2013). *WHO Global Plan of Action on Workers' Health (2008-2017): Baseline for Implementation*. Geneva. Retrieved from http://www.who.int/occupational_health/who_workers_health_web.pdf

# Appendix

## *Appendix 01.* Online Informed consent

**Objetivo:** Caracterização dos fatores Psicossociais de Risco, Ansiedade e Distress dos professores de ensino superior e averiguar a sua relação com variáveis sociodemográficos. Os dados recolhidos destinam-se exclusivamente a fins de investigação, **são confidenciais e recolhidos de forma anónima.** Em nenhum momento será pedido qualquer elemento que o/a identifique.

Esta investigação está a ser desenvolvida no âmbito da Dissertação de Mestrado em Psicologia da Saúde e Reabilitação Neuropsicológica da Universidade de Aveiro, pela aluna Isabel Souto, com a supervisão científica dos Professores Doutora Anabela Pereira, Doutora Elisabete Brito e Doutor Luís Sancho, com a temática "Riscos psicossociais, *Distress* psicológico em professores do ensino superior".
Caso tenha qualquer questão, dúvida ou interesse na temática, deverá contactar a investigadora Isabel Souto (isabel.souto@ua.pt).

A sua participação implica apenas que responda a um conjunto de questões, sendo que este preenchimento demora entre 15 a 20 minutos.

Com base em estudos anteriores com procedimentos semelhantes, prevemos que a participação neste estudo não acarrete qualquer risco para o seu bem-estar físico e psicológico. Ainda assim, a sua participação é absolutamente voluntária, da qual poderá desistir a qualquer momento, bastando clicar no botão "Sair e limpar questionário", que se encontra no final de cada página.
Ao participar contribuirá para aumentar os conhecimentos relativamente ao contexto de trabalho no ensino superior e servirá de suporte para futuras intervenções que visem aumentar a qualidade de vida nos docentes.
Os dados recolhidos serão exclusivamente usados para fins de investigação, estando salvaguardada a confidencialidade das informações recolhidas.

Ao prosseguir clicando na caixa de verificação abaixo, estará a autorizar a utilização dos seus dados para os fins de investigação indicados. Estará ainda a confirmar que leu e compreendeu a informação fornecida, tendo concordado com a mesma, garantindo que a sua participação é voluntária.

**Desde já agradecemos a sua Colaboração**

CONFIRMO QUE LI E CONCORDO COM A INFORMAÇÃO FORNECIDA, PELO QUE PRETENDO AVANÇAR COM A MINHA PARTICIPAÇÃO NO ESTUDO

☐ Sim
☐ Não

## *Appendix 02.* Paper version Informed consent

**Consentimento Informado**

No âmbito da realização da Dissertação de Mestrado em Psicologia da Saúde e Reabilitação Neuropsicológica, da Universidade de Aveiro, está a ser realizado um estudo de investigação pela aluna Isabel Souto, com a supervisão científica dos Professores Doutora Anabela Pereira, Doutora Elisabete Brito e Doutor Luís Sancho, com a temática "Riscos psicossociais, *Distress* psicológico em professores do ensino superior".

**Objetivo da investigação**

Nesta investigação pretende-se caracterizar os fatores Psicossociais de Risco, Ansiedade e *Distress* dos professores de ensino superior e averiguar a sua relação com variáveis sociodemográficos dos participantes.

**Procedimentos**

A presente investigação compreende a participação de vários docentes do ensino superior de diversas universidades e departamentos. O participante apenas tem que responder a alguns questionários. Os dados são anónimos e confidenciais.
É também proposto aos participantes a possibilidade de participação num programa de intervenção com *biofeedback* focado no autocontrolo da sintomatologia psicofisiológica decorrente de Distress.

**Duração da participação**

Aproximadamente 30 minutos.

**Risco para o participante**

O estudo não apresenta qualquer risco para o participante.

**Benefício para o participante**

A sua participação contribuirá para aumentar os conhecimentos relativamente à ao contexto de trabalho no ensino superior e servirá de suporte para futuras intervenções que visem aumentar a qualidade de vida nos docentes.

**Custos para o participante**

Não existe qualquer custo pela sua participação neste estudo.

**Confidencialidade**

A informação fornecida ou quaisquer dados recolhidos serão mantidos em confidencialidade e não serão associados a qualquer informação pessoal do participante. Serão apenas utilizados para efeitos da presente investigação.

**Natureza voluntária da participação**

A participação nesta investigação é voluntária. Mesmo concordando em participar, poderá abandonar a investigação a qualquer momento, sem qualquer penalização, devendo para o efeito comunicá-lo ao investigador.
Informação de contacto. Caso tenha alguma questão quanto a esta experiência, deverá contactar a investigadora Isabel Souto (isabel.souto@ua.pt).

FOI-ME DADA A OPORTUNIDADE DE LEITURA DESTE CONSENTIMENTO INFORMADO E FOI-ME EXPLICADO O PROCEDIMENTO DA INVESTIGAÇÃO. FOI-ME DADA PERMISSÃO PARA COLOCAR QUESTÕES ACERCA DA INVESTIGAÇÃO E ESSAS QUESTÕES FORAM-ME EXPLICADAS. ESTOU PREPARADO/A PARA PARTICIPAR NO PROJETO ACIMA DESCRITO.

_____ Data ___ / ___ / _____
(Nome e Assinatura do participante)

_____ (OPCIONAL)
(Se estiver interessado na intervenção com biofeedback, por favor deixe o seu contacto de email)

_____ Data ___ / ___ / ____
(O investigador)

***Appendix 03.*** Sociodemographic questionnaire

**Questionário Sociodemográfico**

A aplicação destes questionários não se destina a uma avaliação individual, reservam-se exclusivamente no âmbito da investigação dos "Riscos psicossociais e *Distress* psicológico em professores do ensino superior".
As suas respostas são confidenciais e anónimas. Recorde-se de que não existem respostas certas ou erradas, o que importa é a sua opinião.

Sexo/ Género: ☐ Masculino ☐ Feminino Idade:_____

Estado Civil: ☐ Solteiro ☐ União de facto/Casado ☐ Divorciado/ Separado ☐ Viúvo

Universidade, Departamento/Faculdade:_____
Área científica:_____

Anos de trabalho como Docente de ensino superior: _____anos

Tipo de contrato: ☐ Efetivo ☐ Temporário

Horário de trabalho: ☐ Horário total ☐ Tempo parcial_____%

Quais as funções que habitualmente realiza/ cargos que assume?
(Poderá assinalar mais do que uma opção)

☐ Docência
☐ Investigação
☐ Orientação de dissertações/estágios
☐ Cargos de gestão
☐Tarefas administrativas
☐Outro. Qual?_____

Das funções realizadas/ cargos que assume, qual representa uma maior sobrecarga de trabalho?
(Ordene por ordem decrescente)

__º Docência
__º Investigação
__º Orientação de dissertações/estágios
__º Cargos de gestão
__º Tarefas administrativas
__º Outro. Qual?_____

Como avalia a sua qualidade de vida?
☐ 1. Muito má ☐ 2. Má ☐ 3. Nem boa nem má ☐ 4. Boa ☐ 5. Muito boa

***Appendix 04.*** Kessler Psychological Distress Scale (K10)

**EDPK (K10)**

Não existem respostas certas ou erradas. Responda de acordo como se sentiu **durante os últimos 30 dias**. Para cada afirmação escolha uma das seguintes alternativas:

| | ***Nenhum dia*** | ***Poucos dias*** | ***Alguns dias*** | ***A maior parte dos dias*** | ***Todos os dias*** |
|---|---|---|---|---|---|
| **Com que frequência durante os últimos 30 dias se sentiu:** | | | | | |
| 1. Cansado sem nenhuma razão aparente? | 1 | 2 | 3 | 4 | 5 |
| 2. Nervoso? | 1 | 2 | 3 | 4 | 5 |
| 3. Nervoso ao ponto de nada o conseguir acalmar? | 1 | 2 | 3 | 4 | 5 |
| 4. Sem esperança? | 1 | 2 | 3 | 4 | 5 |
| 5. Irrequieto ou agitado? | 1 | 2 | 3 | 4 | 5 |
| 6. Irrequieto ao ponto de não conseguir parar quieto? | 1 | 2 | 3 | 4 | 5 |
| 7. Deprimido? | 1 | 2 | 3 | 4 | 5 |
| 8. Que tudo era um esforço? | 1 | 2 | 3 | 4 | 5 |
| 9. Tão triste que nada o conseguiu animar? | 1 | 2 | 3 | 4 | 5 |
| 10. Inútil? | 1 | 2 | 3 | 4 | 5 |

***Appendix 05.*** Brief Resilient Coping Scale (BRCS)

**EBCR**

**Das seguintes afirmações indique (x) na que mais se adequa à sua resposta.**

| | ***Quase nunca*** | ***Ocasionalmente*** | ***Muitas vezes*** | ***Com muita frequência*** | ***Quase sempre*** |
|---|---|---|---|---|---|
| 1. Procuro formas criativas de superar situações difíceis | 1 | 2 | 3 | 4 | 5 |
| 2. Independentemente do que me possa acontecer, acredito que posso controlar as minhas reações | 1 | 2 | 3 | 4 | 5 |
| 3. Acredito que posso crescer positivamente lidando com situações difíceis | 1 | 2 | 3 | 4 | 5 |
| 4. Procuro ativamente formas de substituir as perdas que encontro na vida | 1 | 2 | 3 | 4 | 5 |

***Appendix 06.*** STAI-Y1 - State anxiety inventory (subscale)

**STAI (Y1)**

Abaixo encontra uma lista de frases que as pessoas utilizam para se descreverem a si próprias.
Leia cada uma delas e faça uma cruz (X) no número da direita que indique **como se sente agora**, isto é, **neste preciso momento**. Não há respostas certas nem erradas. Não gaste demasiado tempo em cada pergunta, dê a resposta que lhe parece descrever melhor a maneira como **atualmente se sente.**

| | *Nada* | *Um pouco* | *Moderadamente* | *Muito* |
|---|---|---|---|---|
| 1. Sinto-me calmo | 1 | 2 | 3 | 4 |
| 2. Sinto-me seguro | 1 | 2 | 3 | 4 |
| 3. Estou tenso | 1 | 2 | 3 | 4 |
| 4. Sinto-me com “culpas” | 1 | 2 | 3 | 4 |
| 5. Sinto-me à vontade | 1 | 2 | 3 | 4 |
| 6. Sinto.me aborrecido | 1 | 2 | 3 | 4 |
| 7. Presentemente ando preocupado com possíveis contratempos | 1 | 2 | 3 | 4 |
| 8. Sinto-me descansado | 1 | 2 | 3 | 4 |
| 9. Sinto-me ansioso | 1 | 2 | 3 | 4 |
| 10. Sinto-me confortável | 1 | 2 | 3 | 4 |
| 11. Sinto-me com confiança em mim próprio | 1 | 2 | 3 | 4 |
| 12. Sinto-me nervoso | 1 | 2 | 3 | 4 |
| 13. Sinto-me uma pilha de nervos | 1 | 2 | 3 | 4 |
| 14. Sinto-me prestes a rebentar | 1 | 2 | 3 | 4 |
| 15. Estou descontraído | 1 | 2 | 3 | 4 |
| 16. Sinto-me contente | 1 | 2 | 3 | 4 |
| 17. Estou preocupado | 1 | 2 | 3 | 4 |
| 18. Sinto-me muito excitado e aturdido | 1 | 2 | 3 | 4 |
| 19. Sinto-me alegre | 1 | 2 | 3 | 4 |
| 20. Sinto-me bem-disposto | 1 | 2 | 3 | 4 |

***Appendix 07.*** STAI-Y1 - State anxiety inventory (subscale)

**STAI (Y2)**

Em baixo encontra uma série de frases que as pessoas costumam utilizar para se descreverem a si próprias.

Leia cada uma delas e faça uma cruz (X) no número da direita que indique como **habitualmente se sente.** Não há respostas certas nem erradas. Não gaste demasiado tempo em cada pergunta, dê a resposta que lhe parece descrever melhor a maneira como **habitualmente se sente.**

| | *Nada* | *Um pouco* | *Moderadamente* | *Muito* |
|---|---|---|---|---|
| 21. Sinto-me bem-disposto | 1 | 2 | 3 | 4 |
| 22. Canso-me com facilidade | 1 | 2 | 3 | 4 |
| 23. Apetece-me chorar | 1 | 2 | 3 | 4 |
| 24. Gostava de poder ser feliz como os outros parecem ser | 1 | 2 | 3 | 4 |
| 25. Perco oportunidades pois não consigo decidir com rapidez | 1 | 2 | 3 | 4 |
| 26. Sinto-me descansado | 1 | 2 | 3 | 4 |
| 27. Sou “calmo, indiferente e sereno” | 1 | 2 | 3 | 4 |
| 28. Sinto que as dificuldades se amontoam de maneira que não consigo ultrapassá-las | 1 | 2 | 3 | 4 |
| 29. Inquieto-me com coisas que na realidade não têm importância | 1 | 2 | 3 | 4 |
| 30. Sou feliz | 1 | 2 | 3 | 4 |
| 31. Levo as coisas muito a sério | 1 | 2 | 3 | 4 |
| 32. Tenho falta de confiança em mim próprio | 1 | 2 | 3 | 4 |
| 33. Sinto-me seguro | 1 | 2 | 3 | 4 |
| 34. Tento evitar fazer frente a uma crise ou dificuldade | 1 | 2 | 3 | 4 |
| 35. Sinto “neura” | 1 | 2 | 3 | 4 |
| 36. Estou satisfeito | 1 | 2 | 3 | 4 |
| 37. Alguns pensamentos sem importância passam pela minha cabeça e aborrecem-me | 1 | 2 | 3 | 4 |
| 38. Tomo as contrariedades tão a sério que não consigo deixar de pensar nelas | 1 | 2 | 3 | 4 |
| 39. Sou uma pessoa imperturbável | 1 | 2 | 3 | 4 |
| 40. Quando penso nos assuntos que tenho entre mãos fico tenso e a “ferver por dentro” | 1 | 2 | 3 | 4 |

***Appendix 08.*** Copenhagen Psychosocial Questionnaire (COPSOQ – Medium version).

COPSOQ II – Versão Média:

| Das seguintes afirmações indique (x) na que mais se adequa à sua resposta de acordo com as seguintes alternativas: | Nunca/ quase nunca | Raramente | Às vezes | Frequentemente | Sempre |
|---|---|---|---|---|---|
| 1. A sua carga de trabalho acumula-se por ser mal distribuída? | 1 | 2 | 3 | 4 | 5 |
| 2. Com que frequência não tem tempo para completar todas as tarefas do seu trabalho? | 1 | 2 | 3 | 4 | 5 |
| 3. Precisa fazer horas-extra? | 1 | 2 | 3 | 4 | 5 |
| 4. Precisa trabalhar muito rapidamente? | 1 | 2 | 3 | 4 | 5 |
| 5. O seu trabalho exige a sua atenção constante? | 1 | 2 | 3 | 4 | 5 |
| 6. O seu trabalho requer que seja bom a propor novas ideias? | 1 | 2 | 3 | 4 | 5 |
| 7. O seu trabalho exige que tome decisões difíceis? | 1 | 2 | 3 | 4 | 5 |
| 8. O seu trabalho exige emocionalmente de si? | 1 | 2 | 3 | 4 | 5 |
| 9. Tem um elevado grau de influência no seu trabalho? | 1 | 2 | 3 | 4 | 5 |
| 10. Participa na escolha das pessoas com quem trabalha? | 1 | 2 | 3 | 4 | 5 |
| 11. Pode influenciar a quantidade de trabalho que lhe compete a si? | 1 | 2 | 3 | 4 | 5 |
| 12. Tem alguma influência sobre o tipo de tarefas que faz? | 1 | 2 | 3 | 4 | 5 |
| 13. O seu trabalho exige que tenha iniciativa? | 1 | 2 | 3 | 4 | 5 |
| 14. O seu trabalho permite-lhe aprender coisas novas? | 1 | 2 | 3 | 4 | 5 |
| 15. O seu trabalho permite-lhe usar as suas habilidades ou perícias? | 1 | 2 | 3 | 4 | 5 |
| 16. No seu local de trabalho, é informado com antecedência sobre decisões importantes, mudanças ou planos para o futuro? | 1 | 2 | 3 | 4 | 5 |
| 17. Recebe toda a informação de que necessita para fazer bem o seu trabalho? | 1 | 2 | 3 | 4 | 5 |
| 18. O seu trabalho apresenta objetivos claros? | 1 | 2 | 3 | 4 | 5 |
| 19. Sabe exatamente quais as suas responsabilidades? | 1 | 2 | 3 | 4 | 5 |
| 20. Sabe exatamente o que é esperado de si? | 1 | 2 | 3 | 4 | 5 |
| 21. O seu trabalho é reconhecido e apreciado pela gerência? | 1 | 2 | 3 | 4 | 5 |
| 22. A gerência do seu local de trabalho respeita-o? | 1 | 2 | 3 | 4 | 5 |
| 23. É tratado de forma justa no seu local de trabalho? | 1 | 2 | 3 | 4 | 5 |
| 24. Faz coisas no seu trabalho que uns concordam, mas outros não? | 1 | 2 | 3 | 4 | 5 |
| 25. Por vezes tem que fazer coisas que deveriam ser feitas de outra maneira? | 1 | 2 | 3 | 4 | 5 |
| 26. Por vezes tem que fazer coisas que considera desnecessárias? | 1 | 2 | 3 | 4 | 5 |
| 27. Com que frequência tem ajuda e apoio dos seus colegas de trabalho? | 1 | 2 | 3 | 4 | 5 |
| 28. Com que frequência os seus colegas estão dispostos a ouvi-lo(a) sobre os seus problemas de trabalho? | 1 | 2 | 3 | 4 | 5 |
| 29. Com que frequência os seus colegas falam consigo acerca do seu desempenho laboral? | 1 | 2 | 3 | 4 | 5 |
| 30. Com que frequência o seu superior imediato fala consigo sobre como está a decorrer o seu trabalho? | 1 | 2 | 3 | 4 | 5 |

| Das seguintes afirmações indique (x) na que mais se adequa à sua resposta de acordo com as seguintes alternativas: | Nunca/ quase nunca | Raramente | Às vezes | Frequentemente | Sempre |
|---|---|---|---|---|---|
| 31. Com que frequência tem ajuda e apoio do seu superior imediato? | 1 | 2 | 3 | 4 | 5 |
| 32. Com que frequência é que o seu superior imediato fala consigo em relação ao seu desempenho laboral? | 1 | 2 | 3 | 4 | 5 |
| 33. Existe um bom ambiente de trabalho entre si e os seus colegas? | 1 | 2 | 3 | 4 | 5 |
| 34. Existe uma boa cooperação entre os colegas de trabalho? | 1 | 2 | 3 | 4 | 5 |
| 35. No seu local de trabalho sente-se parte de uma comunidade? | 1 | 2 | 3 | 4 | 5 |
| Em relação à sua chefia direta até que ponto considera que… | | | | | |
| 36. Oferece aos indivíduos e ao grupo boas oportunidades de desenvolvimento? | 1 | 2 | 3 | 4 | 5 |
| 37. Dá prioridade à satisfação no trabalho? | 1 | 2 | 3 | 4 | 5 |
| 38. É bom no planeamento do trabalho? | 1 | 2 | 3 | 4 | 5 |
| 39. É bom a resolver conflitos? | 1 | 2 | 3 | 4 | 5 |
| As questões seguintes referem-se ao seu local de trabalho no seu todo. | | | | | |
| 40. Os funcionários ocultam informações uns dos outros? | 1 | 2 | 3 | 4 | 5 |
| 41. Os funcionários ocultam informação à gerência? | 1 | 2 | 3 | 4 | 5 |
| 42. Os funcionários confiam uns nos outros de um modo geral? | 1 | 2 | 3 | 4 | 5 |
| 43. A gerência confia nos seus funcionários para fazerem o seu trabalho bem? | 1 | 2 | 3 | 4 | 5 |
| 44. Confia na informação que lhe é transmitida pela gerência? | 1 | 2 | 3 | 4 | 5 |
| 45. A gerência oculta informação aos seus funcionários? | 1 | 2 | 3 | 4 | 5 |
| 46. Os conflitos são resolvidos de uma forma justa? | 1 | 2 | 3 | 4 | 5 |
| 47. As sugestões dos funcionários são tratadas de forma séria pela gerência? | 1 | 2 | 3 | 4 | 5 |
| 48. O trabalho é igualmente distribuído pelos funcionários? | 1 | 2 | 3 | 4 | 5 |
| 49. Sou sempre capaz de resolver problemas, se tentar o suficiente. | 1 | 2 | 3 | 4 | 5 |
| 50. É-me fácil seguir os meus planos e atingir os meus objetivos. | 1 | 2 | 3 | 4 | 5 |
| 51. O seu trabalho tem algum significado para si? | 1 | 2 | 3 | 4 | 5 |
| 52. Sente que o seu trabalho é importante? | 1 | 2 | 3 | 4 | 5 |
| 53. Sente-se motivado e envolvido com o seu trabalho? | 1 | 2 | 3 | 4 | 5 |
| 54. Gosta de falar com os outros sobre o seu local de trabalho? | 1 | 2 | 3 | 4 | 5 |
| 55. Sente que os problemas do seu local de trabalho são seus também? | 1 | 2 | 3 | 4 | 5 |
| Em relação ao seu trabalho em geral, quão satisfeito está com… 5 | | | | | |
| 56. As suas perspetivas de trabalho? | 1 | 2 | 3 | 4 | 5 |
| 57. As condições físicas do seu local de trabalho? | 1 | 2 | 3 | 4 | 5 |
| 58. A forma como as suas capacidades são utilizadas? | 1 | 2 | 3 | 4 | 5 |
| 59. O seu trabalho de uma forma global? | 1 | 2 | 3 | 4 | 5 |
| 60. Sente-se preocupado em ficar desempregado? | 1 | 2 | 3 | 4 | 5 |

| | Excelente | Muito boa | Boa | Razoável | Deficitária |
|---|---|---|---|---|---|
| 61.Em geral, sente que a sua saúde é: . | | | | | |

| | Nunca/ quase nunca | Raramente | Às vezes | Frequentemente | Sempre |
|---|---|---|---|---|---|
| As próximas três questões referem-se ao modo como o seu trabalho afeta a sua vida privada: | | | | | |
| 62. Sente que o seu trabalho lhe exige muita energia que acaba por afetar a sua vida privada negativamente? | 1 | 2 | 3 | 4 | 5 |
| 63. Sente que o seu trabalho lhe exige muito tempo que acaba por afetar a sua vida privada negativamente? | 1 | 2 | 3 | 4 | 5 |
| 64. A sua família e os seus amigos dizem-lhe que trabalha demais? | 1 | 2 | 3 | 4 | 5 |
| Com que frequência durante as últimas 4 semanas sentiu… | | | | | |
| 65. Dificuldade a adormecer? | 1 | 2 | 3 | 4 | 5 |
| 66. Acordou várias vezes durante a noite e depois não conseguia adormecer novamente? | 1 | 2 | 3 | 4 | 5 |
| 67. Fisicamente exausto? | 1 | 2 | 3 | 4 | 5 |
| 68. Emocionalmente exausto? | 1 | 2 | 3 | 4 | 5 |
| 69. Irritado? | 1 | 2 | 3 | 4 | 5 |
| 70. Ansioso? | 1 | 2 | 3 | 4 | 5 |
| 71. Triste? | 1 | 2 | 3 | 4 | 5 |
| 72. Falta de interesse por coisas quotidianas? | 1 | 2 | 3 | 4 | 5 |
| Nos últimos 12 meses, no seu local de trabalho: | | | | | |
| 73. Tem sido alvo de insultos ou provocações verbais? | 1 | 2 | 3 | 4 | 5 |
| 74. Tem sido exposto a assédio sexual indesejado? | 1 | 2 | 3 | 4 | 5 |
| 75. Tem sido exposto a ameaças de violência? | 1 | 2 | 3 | 4 | 5 |
| 76. Tem sido exposto a violência física? | 1 | 2 | 3 | 4 | 5 |

Tem algum comentário a fazer a este estudo?

_____

_____

_____

**Obrigada pela sua Colaboração**